

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0141849

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. USE OF A SEPARABLE EXPANSION FOR THE TWO-PARTICLE T MATRIX REDUCES THE PROBLEM OF THREE PARTICLES WITH PAIR INTERACTION TO A SET OF ONE DIMENSIONAL INTEGRAL EQUATIONS. BY THE SUBSEQUENT SEPARABLE REPRESENTATION OF KERNELS OF SUCH INTEGRAL EQUATIONS (BASED ON THE BATEMAN METHOD) THE PROBLEM OF THREE IDENTICAL PARTICLES IS REDUCED TO THE SOLUTION OF ALGEBRAIC EQUATIONS. (13 REFS). FACILITY: ACAD. SCIS., UKRAINIAN SSR, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 669.716:621.777.2

BARANCHIKOV, V. M., GLEBOV, Yu. P., GOROKHOV, V. S., DENISOV, S. M.,
ZAKHAROV, M. F., MILORADOVA, O. N., KHARENKO, V. F., and TSAREV, V. I.

"Development and Investigation of the Process of Pressing Rods and Shapes
of Aluminum Alloys with Lubricant Without Press-Residue"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 129-137, resume

Translation: A number of problems related to the investigation of the process
of pressing aluminum alloys with lubricant and the investigation of mechanical
properties, macrostructure, and geometric dimensions of products are discussed.
Technological-economical data on the process are presented. Five figures, nine
tables, seven bibliographic references.

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UDC: 629.78.018.1

USSR

RINKEVICHYUS, B. S., TOLKACHEV, A. V., KHARCHENKO, V. N.

"Determination of the Velocity of a Hypersonic Stream by the Doppler Effect"

Uch. Zap. Tsentr. Aero-Gidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, Vol 4, No 1, pp 25-32
(Translated from Referativnyy Zhurnal Raketostroyeniye, No 6, 1973, Abstract No 6.41.133, from the Resume).

Translation: The operation of an optical Doppler velocity measuring device is studied. A narrow-band Fabry-Perot interferometer filter is used to separate the Doppler frequency shift. Experimental data are presented on the stream velocity profile in a hypersonic wind tunnel at $M_\infty = 5$ with prechamber temperatures of 120 and 250° C. The maximum value of velocity measured was 1040 m/sec. The results are compared with data produced by temperature and pressure measurements. 4 figures, 8 biblio. refs.

1/1

UDC: 632.95

USSR

KHARCHENKO, V. G., KUPRANETS, N. M., POLIKARPOVA, N. V., KRUPINA, T. I., and
~~KITMENKO, S. K.~~, Saratov Polytechnical Institute

"A Method for Preparing Tetrahydrothiochromyl or symm-Octahydrothioxanthenyl
Chlorides"

USSR Author's Certificate No 255292, filed 19 Mar 68, published 8 Apr 70
(from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N674 P by G. V. Kuznetsova)

Translation: These substances, which can be used as physiologically active compounds, are obtained from the reaction of semi- or bicyclic 1,5-diketones with H_2S and HCl in an $AcOH$ medium. A solution of 13.4 g of 1-phenyl-3-(n-methoxyphenyl)-3-(2-cyclohexanonyl)-propanone-1 in 45 ml of glacial $AcOH$ is saturated with H_2S (1 hour) and then with a mixture of H_2S and HCl gas (3 hours) and H_2S (1 hour): 6 g (about 45%) of 2-phenyl-2-mercaptol-4-(n-methoxyphenyl)-heptahydrothiochromene is filtered off from the reaction mass. The filtrate is diluted with 300 ml of dry ether, the sediment filtered off, washed with ether and benzene, producing 3.3 g (about 20%) hydrochloride of 2-phenyl-4-(n-methoxyphenyl)-5,6,7,8-tetrahydrothiochromyl chloride, $C_{22}H_{22}Cl_2OS$, melting

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USSR

KHARCHENKO, V. G., et al., USSR Author's Certificate No 258292, filed 19 Mar 68,
 published 6 Apr 70 (from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N674 P
 by G. V. Kuznetsova)

point 111-4°; perchlorate of chloride, C₁₄H₁₇ClO₄S, melting point 169-71°. Symm-
 -Octahydrothioxanthenyl chloride (I), C₂₂H₁₇ClS, is prepared from methylenedicy-
 clohexanone under similar conditions, yield 50%, melting point 95-7° (chloroform-
 ether). The corresponding iodide, C₁₃H₁₇IS, is obtained from the action of 45%
 HI in ether on I, melting point 153.5-6°. 9-Benzyl-symm-octahydrothioxanthen-
 107-9°. The hydrochloride of 9-methyl-symm-octahydrothioxanthenyl chloride,
 C₁₄H₂₀Cl₂S, is obtained under these conditions from ethylenedicyclohexanone
 with a yield of 40%, melting point 155-6° (chloroform-ether). It is converted
 by the action of HI into the corresponding iodide, C₁₄H₁₉IS, melting point
 143-5°.

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- 91 -

Acc. Nr:

AP0048812

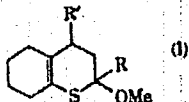
Abstracting Service:
CHEMICAL ABST.

4170

Ref. Code:

UR0366

90212j Reaction of "semicyclic" 1,5-diketones with hydrogen sulfide. ~~Kharchenko, V. G.~~; Kupranets, N. M. (USSR). Zh. Org. Khim. 1970, 6(1), 193 (Russ). In the reaction of 2-[(CHR-CH₂COR')-substituted]-cyclohexanones with H₂S in MeOH soln. contg. dry HCl(g), MeOH also participates. The reaction gives substituted 2-methoxy-1-thia-1,2,3,4,5,6,7,8-octahydronaphthalenes (I) (R' and R given): Ph, 4-MeOC₆H₄; β-naphthyl, Ph;



β-naphthyl, 4-MeOC₆H₄; Ph, 3,4-(MeO)₂C₆H₃. In AcOH soln., I react with HCl or HClO₄ forming 2R,4R'-disubstituted-5,6-tetramethylenethiopyrylium hydrochlorides or perchlorates. CPJR

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REEL/FRAME
19800575

1/2 007

UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--REACTION OF 1,5-DIKETONES WITH HYDROGEN SULFIDE IN ACID MEDIA -U-

AUTHOR--(05)-KHARCHENKO, V.G., KUPRANETS, N.M., KLEIMENOVA, Y.I.,
RASSUDOVA, A.A., STANKEVICH, M.E.

COUNTRY OF INFO--USSR

SOURCE--ZH. URG. KHIM. 1970, 6(5), 1119-20 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--KETONE, HYDROGEN SULFIDE, BENZENE DERIVATIVE, THIOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1289

STEP NO--UR/C366/70/006/005/1119/1120

CIRC ACCESSION NO--AP0134963

UNCLASSIFIED

PROCESSING DATE--11DEC70

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0134963
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE REACTION OF RCOCHR PRIME1 CHR
 PRIME2 CHR PRIME3 CHR PRIME4 WITH H SUB2 S AND HBR, HI, OR P SUB2 O SUB5
 IN INERT SOLVENTS GIVES 2,R,3,R PRIME1, 4,R PRIME2, 5,R PRIME3, 6,R
 PRIME4, PENTASUBSTITUTED THIOPYRANS, WHICH DISPROPORTIONATE IN ACID
 MEDIUM TO GIVE ONE MOL. OF THE CORRESPONDING TETRAHYDROTHIOPYRAN (I) AND
 2 MOLS. OF THE CORRESPONDING THIOPYRYLIUM CHLORIDE. PROPERTIES OF THE
 FOLLOWING I ARE GIVEN (R, R PRIME1, R PRIME2, R PRIME3, AND R PRIME4
 GIVEN): PH, H, H, H, PH; PH, H, PH, H, PH; PH, H, ME, H, PH; ALSO R
 EQUALS PH, R PRIME1 EQUALS H, R PRIME2 EQUALS P, MECC SUB6 H SUB4, (R
 PRIME3 R PRIME4 EQUALS) (CH SUB2) SUB4; R EQUALS PH, R PRIME1 EQUALS H,
 R PRIME2 EQUALS C SUB6 H SUB3 (OME) SUB2 3,4, (R PRIME3 R PRIME4 EQUALS
) (CH SUB2) SUB4; AND (R EQUALS R PRIME1 EQUALS) (CH SUB2) SUB4, (R
 PRIME3 R PRIME4 EQUALS) (CH SUB2) SUB4, R PRIME2 EQUALS H OR ME.
 FACILITY: SARATOV. POLITEKH. INST., SARATOV, USSR.

UNCLASSIFIED

KHARCHENKO, V.I.

RAV / 12.160 / 5.11.73

Dorovoy, V. Ya., Kharchenko, V. I. Experimental investi-
gation of flow and heat exchange in the separation zone on an
axisymmetric body with a conic shield. MZhIG, no. 3,
1972, 35-40.

The results are presented of an experimental investigation of the distribution of pressure and heat exchange on the surface of a conic shield mounted on a cylinder with a conic nose. The shield inclination angle was varied from 10 to 60°, the ratio of the cylinder length to the shield base diameter was $l/D = 0.5-2$. The experiments were conducted at Mach number $M_{\infty} = 5$, pressure $P_0 = 8$ bar, stagnation temperature $T_0 = 400-773^\circ K$, and a Reynolds number, calculated on the basis of the total length model, $Re = 0.6 \times 10^6$.

Shadow photographs show that on a model with an angle of shield inclination $\varphi = 30^\circ$ and an angle of attack $\alpha = 0$, a separation zone develops, with shock wave formation at points of separation and attachment. At values of $\varphi \geq 30^\circ$, the laminar mixing layer in the stall zone becomes turbulent, and separation lines are clearly detected on the basis of points applied by washable paint. On a model with $\varphi = 30^\circ$ at $\alpha = 10^\circ$, points applied in the separation zone were practically not washed out at all.

Measurement of change of the angle of inclination of the stall zone to the cylinder generatrix, θ , in relation to the cylinder length at $\alpha = 0$ ($\varphi = 10, 20, 30^\circ$), revealed that with sufficient cylinder length, equal values of angle θ ($4-4.5^\circ$) were yielded for all shields; this corresponds to a separation point along the

USSR

KARPINOS, D. M., KRAVCHENKO, A. A., PILIPOVSKIY, Yu. Ya., TKACHENKO, V. G.,
SHAMATOV, Yu. M., KHARCHENKO, V. K., Kiev

"Study of Mechanical Characteristics of Hot Pressed Tungsten-Copper Pseudo-
alloys"

Kiev, Problemy Prochnosti, No. 12, Dec 70, pp. 64-68

Abstract: Studies are made of the mechanical characteristics of hot-pressed tungsten-copper pseudoalloys and their dependence on the density of the tungsten framework containing the lower-melting component and the time of isothermal holding at the pressing temperature. It is demonstrated that the strength, plasticity and impact toughness increase with increasing density of the refractory framework and holding time in the 1900-2200°C temperature interval during pressing. The hardness and strength in compression depend primarily on the density of the framework and the degree of filling of the pores with copper.

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USSR

UDC 532.526:533.694.71/72

KHARCHENKO, V. N.

"Experimental Investigation of Flow About Sharp and Blunt Cones by a Hypersonic Stream of Helium in the Presence of Strong Injection"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6,
Nov-Dec 72, pp 149-153

Abstract: Results of optical and weight tests are presented, as well as the pressure distribution along the lateral surface of cones with half-angles of 5 and 10° during uniformly distributed injection through the lateral surface or through spherically blunted noses of the cones. It is shown that strong injection brings about an essential change in the distribution of pressure and resistance. This report is a continuation of a report published by the author in the same journal in 1969, in which were presented the first results of experiments in a helium wind tunnel at $M_\infty \approx 25$, with intensive helium injection through the lateral surface of a sharp cone. Subsequent tests, some results of which are presented in the present report, supplement the presently available experimental and technical data, and also permit some characteristic features of flow to be ascertained. Six figures, two tables, seven references.

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UDC 532.526.6.011.6.011.7

USSR

BOROVY, V. YA., KHARCHENKO, V. N., Moscow

"Experimental Study of Flow and Heat Exchange in the Separation Zone on an Axisymmetric Body With a Conical Shield"

Moscow, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 35-40

Abstract: An experimental study of the pressure distribution and heat exchange on the surface of a conical shield located on a cylinder with a conical nose is described. The angle of inclination of the shield varied from 10° to 60° and the ratio of the length of the cylinder to the diameter of the base of the shield $L/D = 0.5-2$. The experiments were made at $M_\infty = 5$, a pressure $p_0 = 8$ bar, and a stagnation temperature $T_0 = 400-773^\circ\text{K}$ with the Reynolds number computed on the basis of the overall length of the model $Re = 0.6 \cdot 10^6$. Data are presented on the flow in the separation zone based on shadow photography along with data on the pressure distribution and heat exchange of flows in the shields. Of particular interest was a study of the effect of angle of attack on heat exchange and there is practically no information in the literature on bodies with conical shields.

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USSR

BOROVY, V. YA., KHARCHENKO, V. N., Mekhanika zhidkosti i gaza, No. 2,
Mar/Apr 72, pp

The effect of angle of attack on heat exchange was studied over a wide range of values of α up to 30° and the results showed that the degree of nonuniformity of the distribution of heat flow over the length of the generatrix does not increase with an increase in angle of attack; in many cases it decreases considerably. This is explained by the fact that the length of the separation zone on the windward surface shortens with an increase in the angle of attack and practically the entire shield is covered with a connected flow.

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USSR

UDC: 536.24:532.526.4

KHARCHENKO, V. H., Central Aerohydrodynamics Institute imeni N.Ye. Zhukovskiy
"Heat Exchange in a Hypersonic, Turbulent Boundary Layer During the Introduction of a Cooling Gas Through a Slit"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 1, Jan-Feb 1972, pp 101-105

The author presents the results of an experimental study associated with flow and heat exchange on a cone surface in a hypersonic stream during the blowing in of air and helium through a tangential, annular slit. The test was conducted at $M_{\infty} = 5$, $T_0 \approx 500^\circ\text{K}$, and $P_0 = 8\text{bar}$. The data of various authors are compared. Film type and porous type cooling are considered. The results show that the effectiveness of a heat shield accomplished by blowing in gas through a tangential slit is somewhat lower than it is for blowing through a porous surface. Original article: three formulas, five figures, and 12 bibliographic entries.

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1/3 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--RESECTION AND PLASTIC REPAIR OF TRACHEAL BIFURCATION IN
BRONCHOPULMONARY CANCER -U-

K

AUTHOR--(02)--KHARCHENKO, V.P., VOLOKHOV, B.E.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 26-30

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, LUNG, RESPIRATORY SYSTEM, CANCER, PNEUMONIA,
CARDIOVASCULAR SYSTEM, RADIOTHERAPY, CHEMOTHERAPY, ANTINEOPLASTIC DRUG,
METASTASIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1902

STEP NO--UR/0631/70/000/005/0026/0030

CIRC ACCESSION NO--AP0137099

UNCLASSIFIED

2/3 023

CIRC ACCESSION NO--AP0137099
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. AT THE MOSCOW ONCOLOGICAL HOSPITAL NO. 62 120 RECONSTRUCTIVE PLASTIC OPERATIONS WERE PERFORMED. RESECTION AND PLASTIC REPAIR OF TRACHEAL BIFURCATION WERE DONE IN 26 CASES. CANCER OF THE UPPER LOBE BRONCHUS OF THE RIGHT LUNG WITH INVOLVEMENT OF THE MAIN BRONCHUS, TRACHEOBRONCHIAL ANGLE AND CARINA OF TRACHEAL BIFURCATION SURVED AS AN INDICATION TO RESECTION. RIGHT SIDED PULMONECTOMY WITH CIRCULAR AND WEDGE LIKE RESECTION OF TRACHEAL BIFURCATION WERE PERFORMED IN 7 PATIENTS, CIRCULAR RESECTION OF TRACHEAL BIFURCATION WITH UPPER LOBECTOMY ON THE RIGHT SIDE WAS DONE IN ONE CASE. IN THIS GROUP OF PATIENTS AN END TO END ANASTOMOSIS WAS FORMED BETWEEN THE LEFT MAIN BRONCHUS AND TRACHEA. ONE PATIENT UNDERWENT A CIRCULAR RESECTION OF THE THORACIC TRACHEA FOR MALIGNANT TUMOR WITH AN END TO END ANASTOMOSIS. THE REMAINING PATIENTS WERE SUBJECTED TO UPPER AND LOWER LOB BILOBECTOMY WITH RESECTION OF THE CARINA OF TRACHEAL BIFURCATION, TRACHEOBRONCHIAL ANGLE AND LATERAL WALL OF THE TRACHEA. AN ANASTOMOSIS WAS ESTABLISHED BETWEEN THE BRONCHUS OF THE REMAINING PART OF THE LUNG, MEDIAN WALL OF THE LEFT MAIN BRONCHUS AND PRELIMINARILY PARTIALLY SUTURED LATERAL TRACHEAL WALL. THREE PATIENTS DIED IN THE POSTOPERATIVE PERIOD. IN TWO CASES DEATH WAS DUE TO PNEUMONIA, IN ONE, ACUTE CARDIOVASCULAR INSUFFICIENCY. IN 16 PATIENTS THE OPERATION WAS COMBINED WITH POSTOPERATIVE AND IN 4, WITH PREOPERATIVE GAMMA THERAPY. THE TOTAL FOCAL DOSE AMOUNTED TO 4500-5000 RAD. IN 6 PATIENTS THE OPERATION WAS COMBINED WITH CHEMOTHERAPY; CYCLOPHOSPHAN WAS INJECTED INTRAVENOUSLY IN A TOTAL DOSE OF 5-6 R.

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--A20137099

ABSTRACT/EXTRACT--FOLLOW UP RANGING UP TO REVEALED UNFAVORABLE RESULTS IN FIVE PATIENTS. THREE OF THEM DEVELOPED METASTASES INTO THE MEDIASTINAL LYMPH NODES AND TWO INTO OTHER ORGANS.

FACILITY: MOSKOVSKAYA

KLINICHESKAYA ONKOLOGICHESKAYA BOL'NITSA NO. 62.

UNCLASSIFIED

ИТХ КЧЕНКО, В. В.

SPRS 59228

6-73

7-4. KINETICS OF THE INITIAL GROWTH STAGE OF EPITAXIAL LAYERS

(Article by B. K. Abdurakhmanov, M. K. Gersunh, V. P. Rashbudeba, V. V. Kharchenko, I. A. Kuznetsov, H. S. Simoniya, III Symposium on Problems of Silicon Technology, Krasnodar, 12-17 June, 1972, p. 35)

A study was made of the phenomenon of inconsistency of the silicon deposition rate during the growth process. The silicon growth kinetics in the initial crystallization conditions (the deposition temperature, the initial surface and the flow rate). The special initial conditions, the SiCl₄ concentration and the growth rate in the first and tenth minutes of deposition decrease with an increase in the SiCl₄ concentration, and for SiCl₄ 0.15 percent it is 3.2 and for SiCl₄ 6.0 percent it is 1.0. At a high deposition temperature, the establishment of the stationary growth rate takes place more rapidly.

The instrument analysis of the gas phase deposition with respect to thermal conductivity and with respect to infrared absorption spectra permitted estimation of the periods of nonstationarity of the vapor-gas mixture composition in the reactor in the case of admission and shut-off of silicon tetrachloride. It is shown that the observed effect of nonstationarity of the growth rate in the initial stages is not determined by the nonstationarity of the growth rate in the initial stages caused by the effect of surface properties of the substrate on the crystallization process.

KHARCHENKO, V.V.

SPRS 59208

6-73

V-5a. ACTIVATION ENERGY OF THE PROCESS OF REDUCING SILICON TETRACHLORIDE BY HYDROGEN

Article by V. V. Kharchenko, V. P. Pashchenko, Tashkent; Novosibirsk, III Semposium po Protsessam Rosta i Sintezu Poluprovodnikovkh Kristallov i Plazma, Krasnodar, 12-17 June, 1972, p 55

Many researchers have tried to estimate the magnitude of the activation energy of the process of hydrogen reduction of $SiCl_4$. For its calculation they used the expression (3) in [3] p. 1, 2, that is, they investigated the variation

of the process rate with invariant concentration of the components in the reaction space. In this case even for simple reactions it is possible to obtain only the values of the "apparent" activation energy. The specific function E_{app} and E_{true} follows from the form of the kinetic equation, the nature of its constants and the reaction mechanism. In practice finding the equation of the investigated reaction encounters serious difficulties.

A study was made of the growth kinetics of silicon in the region of small (0.04-0.15 percent) $SiCl_4$ concentrations on substrates alloyed with antimony. In this case the process rate is described by a first order equation $v = k \cdot C_{SiCl_4}$. The temperature functions were obtained for the process rate constant for a number of values of the vapor-gas mixture flux in the form $k = k_0 \cdot U^n \cdot \exp(-E_a/RT)$. The values of k_0 and E_a for linear flow rates ascending 3 cm/sec (kinetic conditions) coincide and are equal to $7.5 \cdot 10^2$ cm⁴/mole-sec and 12 kcal/mole respectively. The process mechanism and the relation between the "true" and "apparent" activation energies are discussed.

KHARCHENKO, V.V.

SPRS 59208

6-73

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V-3b. EFFECT OF NITROGEN ADMIXTURE ON THE GROWTH OF EPITAXIAL LAYERS OF SILICON IN THE CHLORIDE PROCESS

Article by V. P. Pankhidenko, V. V. Kharchenko, Tashkent; Novosibirsk, III Эпителий, выращенный в смеси хлоридно-водородной атмосфере и азота и аргона. Изв. АН УССР, 1972, p. 50

A study was made of the comparative kinetics of the epitaxial growth of silicon in pure hydrogen and in hydrogen with nitrodosed (10-4%) injection of high-purity nitrogen. The temperature functions of the growth rate obtained in the epoxide temperature range and the micromechanism of the process are discussed. The nitrogen admixture has an effect on the crystallization rate both in the kinetic region and in regions where the linear effect of nitrogen is noted for small concentrations of silicon tetrachloride (0.04 percent) where the growth rate decreases by 2-2.5 times. The strongest chloride concentrations, the difference in growth rates will become more noticeable in the high temperature region on the arithmetic curves on injection of nitrogen. Probable mechanisms of the effect of the nitrogen admixture on the process are discussed.

KHARCHENKO, V.V.

So: 5 PPS 59279
14 June 73

OBTAINING EPITAXIAL SILICON FILMS WITH THE APPLICATION OF HYDROGEN OF HIGH PURITY AND STUDYING THE ADMIXTURE DISTRIBUTION PROFILE
Article by Ye. A. Borzov, A. L. Shindal'skaya, A. S. Lyubovskiy, V. P. Prutkin, V. V. Kharchenko, E. Zhodzhzhikova, A. S. Lyubovskiy, V. P. Prutkin, Atomizatsiya i Khimicheskaya Tekhnologiya, Moscow, No. 1, 1969, pp. 65-72.

The distribution profile of the admixtures in the epitaxial layers plays the decisive role in insuring the given operating characteristics of the semiconductor devices.

The requirements on obtaining precision profiles is intensified sharply in connection with microminiaturization and the technology of solid state circuits.

On the other hand, the nature of the admixture distribution in the epitaxial layers provides rich information permitting the discovery of the mechanism of the interaction of the admixtures with the growing crystal.

In practice, the admixture distribution depends on the effect of many chemical-physical factors among which the principal ones are the reaction kinetics in the gas phase, the capture and displacement of admixtures during the growth process, the phase equilibria and the diffusion over the surface and in the solid state.

There are several papers devoted to the admixture distribution during epitaxial growth [1-3, 5, 6]; however, in them the most important question is not investigated -- the distribution of the film in the body connected with purposeful alloying from the gas phase in the growth process.

Greve [1] investigated the admixture distribution in the film-substrate system for the case where the alloying admixture was evaporated from the solid phase and then was again crystallized from the vapor-gas mixture.

In the indicated paper a study was made of a distribution profile of the admixtures on the basis of the diffusion theory in the solid state, and special experiments were performed with selenium and boron. The author

KHARCHENKO, V. V.

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XV-8. STUDY OF THE SURFACE STRUCTURE OF EPITAXIAL SILICON USING THE PROCE-
DURE OF SLOW ELECTRON DIFFRACTION

Article by U. S. Buzi, V. I. Pashkudenko, I. Kh. Dzhamal'dinov, V. V. Khar-
chenko, Tashkent: Novoribirsk, 111. Sbornik na Professorskim Kofer, Sibirskoe
Kul'turovobshchestvo, Novosibirsk, 1972, p. 2177

By using the slow electron diffraction procedure on the (111) surface
of epitaxial silicon grown in the chloride process, the superstructure of Si
(111)-5 x 5 was detected. It was demonstrated that its occurrence arises
from the presence of chlorine. It is characteristic that the 5 x 5 superstruc-
ture is not observed on the silicon surface grown from a melt, including sam-
ples etched with hydrogen chloride.

The chlorine content in the silicon is determined to a significant de-
gree by the growth conditions, and it correlates with the time of existence of
the 5 x 5 superstructure. Estimates were made of the effect of certain crys-
tallization parameters on the chlorine capture by the epitaxial layers of sili-
con during the growth process.

KHARCHENKO, V.V.

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6-73

5

8-20. STUDY OF THE DISTRIBUTION OF ALLOYING ADMIXTURES IN EPITAXIAL LAYERS OF SILICON WITH THE APPLICATION OF RADIOACTIVE ANALYSIS

(Article by A. S. Lyudovich, V. P. Pashukdenko, V. V. Kharchenko, S. Kh. Zhodakova, Kh. Sh. Shamsalov, Takhent, Novosibirsk, III Sibirskiy nauchno-issledovatel'skiy tsentr, Novosibirsk, 11-17 June 1972, Izv. Sibirskiy Poluprovodnikoviy Institut 1972, No. 1, p. 139)

The idea of this experiment consisted in using alloying admixtures of various chemical nature and varying the crystallization conditions to estimate the contribution of the growth (segregation) effects and the diffusion processes to the final distribution of the admixtures. The epitaxial layers of silicon were obtained by the method of hydrogen reduction of SiCl₄ in a broad concentration range of SiCl₄ and alloying components. The alloying admixtures were introduced into the system in the form of chlorides from a separate source.

In order to determine the distribution profiles of the admixture concentrations in the process of layered growth, the admixtures were introduced into the system in the form of chlorides from a separate source. It was demonstrated that the admixture profile in the investigated specimens is characterized by the presence of two sections: 1 — the section with uniform concentration distribution (the plateau); 2 — the section where the ratio of concentration is nonuniform. Depending on the growth conditions of the admixtures, the extent of these sections varies, by using the concentrations of the admixtures in the plateau region, we define the effect of the crystallization temperature, the concentration of the SiCl₄, the PCl₃ and SbCl₃ in the gas phase on the alloying level of the epitaxial layer. In the case of low concentration of silicon tetrachloride in the gas phase, a sharp increase in admixture concentration is noted in the thin surface layer. This is observed especially frequently in specimens alloyed with antimony. The admixture concentration in region 2 is described satisfactorily by the diffusion equation with effective coefficients the values of which under various crystallization conditions are essentially different. However, the purely diffusion mechanism of the formation of the profiles will be doubtful in connection with the fact that the metallurgical thickness of the epitaxial layers defined experimentally by the pecking defects does not coincide with the calculations. The contribution of the diffusion and segregation phenomena to the distribution profile of the admixture in region 2 is discussed.

KHARCHENKO, V.V.

XPCS
5/2/68
6-23

X-3a. EFFECT OF THE CRYSTALLIZATION CONDITIONS ON THE TRANSFER OF PHOSPHORUS AND ANTIMONY IMPURITIES FROM THE SUBSTRATES INTO THE EPITAXIAL LAYERS OF SILICON

Article by A. S. Ivanovitch, Z. Kh. Khudzhimedov, V. F. Pankhuchenko, V. V. Kharchenko, M. R. Geyrnakh, Sh. Sh. Shanidov, Tashkent: Novosibirsk, III Simpozium po Fizicheskoy Khimii i Silozna Poluprovodnikovykh Kristallov i Plenok, Krasnodar, 12-17 June 1972, p 1261

With the application of a layered radioactive analysis, studies were made of the distribution profiles of antimony and phosphorus in epitaxial layers of silicon as a function of the growth conditions. The epitaxial layers were obtained by the method of hydrogen reduction of silicon tetrachloride. The growth process temperature and the concentration of silicon tetrachloride were varied. The distribution profiles of the antimony and phosphorus were satisfactorily described by diffusion equations with effective diffusion coefficients differing for different growth conditions. The relations between the diffusion coefficient in single crystals and found in our experiments depend essentially on the temperature, the growth rate and growth time.

With an increase in the growth rate the diffusion coefficients of both impurities increase for all crystallization temperatures (for the deposition temperatures of 1,160°C, the variation taken place in the range of $5 \cdot 10^{-12}$ to $4 \cdot 10^{-10}$ cm²/sec for phosphorus and $3 \cdot 10^{-12}$ to 10^{-10} cm²/sec for antimony). The values found for the diffusion coefficients as a function of the growth conditions of the layers can exceed the values known for single crystals. They can be equal and have smaller values.

KHARCHENKO, V.V.

*SP/ES 59308
6-73*

X-3c. CALCULATION OF THE ADMIXTURE PROFILES IN AUTOPHASEAL LAYERS

Article by M. R. Goryash, V. V. Kharchenko, Tshkenti; Novosibirsk, III Sibirskiy Nauchnyy Tsentr, Institut Fizicheskoy Khimii, Krasnoyarskiy Krai, Krasnoyarsk, 12-17 June 1974, p. 130

As a result of solving the problem of intrusion of the adhering admixture during crystallization from the supercritical layer from the gas phase onto the substrate, the formula was obtained for calculating the distribution profile of the admixture in the substrate made up of the autophaseal layer and the substrate. The formula obtained also permits investigation of the variation of the admixture concentration on the surface during the crystallization process and calculation of the time period during which it is established. On the basis of the admixture profiles, it is demonstrated that for certain crystallization conditions, consideration of the inconsistency of the surface concentration of the admixture during the growth process is necessary.

The distribution profile of the admixture transported into the epitaxial layer during the growth process from the opposite side of the substrate within the framework of the model considering evaporation was calculated. The dependence of the admixture profile on the nature of the admixture (the evaporation and diffusion coefficients) and the crystallization conditions was demonstrated. An estimate was made of the alloying level of the epitaxial layer by the substrate admixture for different conditions of crystallization and admixture of different types.

KHARCHENKO, V.V.

3745 59008
6-73

XIV-3. EFFECT OF CRYSTALLIZATION CONDITIONS ON THE MORPHOLOGY OF EPITAXIAL LAYERS OF SILICON

Article by S. R. Boyko, V. P. Ivanukhina, V. V. Kharchenko, Tashkent: Sovetskoye Radio, Moscow, 1972, no. 1, p. 111-112. (Russian) [Sovetskoye Radio, Moscow, 1972, p. 111-112.]

The epitaxial layers of silicon were obtained by the method of reducing SiCl_4 in an atmosphere of pure hydrogen in a broad growth temperature range (1,000-1,310° C) and SiCl_4 concentration range in the gas phase (0.05-10 percent by volume). The shape, the regions of retarded growth -- holes and regions of accelerated growth -- pyramids and trapezoids, presence of certain types of microdefects, their density, their morphology and crystallographic orientation essentially depend on the crystallization conditions. Increasing the SiCl_4 concentration with respect to effect on the morphology of the layers is equivalent to increasing the crystallization temperature and leads to a decrease in the defect density of all types. On the limits of the great amount of acetalated data, the conditions of the predominant occurrence of defects of different types are defined. These data are presented in the diagram. The occurrence of microdefects is connected with the mechanism of crystallization of epitaxial layers.

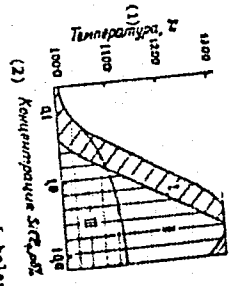


Diagram. Region of occurrence of holes, pyramids (1) and trapezoids (111). Key: 1. temperature, °C; 2. concentration of SiCl_4 , % by volume

UDC: 621.396.621.33

USSR

~~KHARCHENKO, Yu. D.~~

"Transient Processes in a Circuit With Tracking Frequency Converter"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 635-640

Abstract: The author considers transient processes in a threshold reduction circuit with tracking frequency converter for reception of signals with analog frequency modulation. It is shown that with certain simplifying assumptions, the given circuit is a third-order servosystem. The nature of the transient processes is determined by the relations between the time constants of the loops rather than by their absolute values. The transient processes can only be oscillatory. The regions of aperiodic and oscillatory transient processes are plotted in the space of circuit parameters, and families of transient characteristics are presented.

1/1

USSR

UDC 529.014.2

KHARCHEVNIKOV, V. P., and OVSYANNIKOV, B. M., Moscow, Central Scientific
Research Institute of Ferrous Metallurgy

"Tendency to Brittle Fracture of Low-Carbon Steels Under Tensile Stress"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 94-98

Abstract: A method is outlined for evaluating the resistance to brittle fracture of two brands of 17G1S steel under tensile stress. Flat samples with initiated cracks of definite size were used. The temperature range of the tests was from 20° to -196°C. Samples were cut from heat rolled sheets 3 mm thick. Resistance to brittle fracture was studied through variation of yield point, strength, elongation per unit length, strength of samples with an initiated crack, and coefficient of stress intensity, with real size of ferrite grain. Grain size was determined after normalizing in the temperature range from 900 to 1250°C in accordance with GOST 5639-65.

The temperature corresponding to fracture without deformation initiation may serve as a criterion for low-carbon steel. The strength, yield point, and elongation of both steel melts were about the same, although they varied a little with grain size.

1/1

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 020
TITLE--A PLANE IS GETTING READY FOR A TAKE OFF -U-

AUTHOR--KHARCHIKOV, V.

COUNTRY OF INFO--USSR

SOURCE--SOVetskaya LATVIYA, MAY 28, 1970, P 2, COLS 1-6

DATE PUBLISHED--28MAY70

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

TOPIC TAGS--AIRFIELD AUXILIARY EQUIPMENT, BENDING MACHINE, METAL DRAWING,
BORING MACHINE, AIRCRAFT ENGINE HEATER, INDUSTRIAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1991/1257

STEP NO--UR/9019/70/000/000/0002/0002

CIRC ACCESSION NO--AN0110876

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AN0110876

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAST YEAR THE RIGA CIVIL AVIATION PLANT ACQUIRED A NEW METAL WORKING AND ASSEMBLY BUILDING AND NEW MACHINERY FOR IT INCLUDING AN ECCENTRIC 130 TON BENDING PRESS, A 160 TON DRAWING OUT PRESS, A BORING MILL AND A BATTERY OF PAINT DRYING CHAMBERS. AS A RESULT, THE PLANT WILL INCREASE THE RATE OF THE AIRPORT EQUIPMENT PRODUCTION, INCLUDING ENGINE PREHEATERS WHICH ARE ONE OF THE PRIME PRODUCTS OF THE PLANT. A. VALIYEV, SUPERINTENDENT OF THE METAL WORKING AND ASSEMBLY DEPARTMENT, T. KOSHELEV AND A. ERNEL, TECHNOLOGISTS OF THE PLANT, ARE MENTIONED.

UNCLASSIFIED

USSR

UDC: 621.397.61

SHAPIRO, Ya. A., GALAKHOVA, N. G., VOVSI, L. M., BERLIN, B. A., KHARCHIK-
YAN, R. S., VOROB'YEVA, F. Kh.

"Technical Facilities of Television Services of the Soviet-Wide Television Center"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz", 1971, pp 127-163 (from HZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G190)

Translation: Basic data are given on studio and announcer TV cameras, motion picture cameras with TV view finder, cameras for transmitting motion picture films in TV and motion picture projection rooms, and epidiascopic projectors for transmitting transparencies, photos, drawings, etc. The individual elements of the instrument and program unit, central instrument room and video recording unit are described. N. S.

1/1

1/3 '016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A METHOD FOR FORECAST OF THE AVERAGE MONTHLY TEMPERATURE, COLD AND
HEAT WAVES, AND MONTHLY TOTAL ATMOSPHERIC PRECIPITATIONS IN
AUTHOR--KHARCHILAVA, E.T.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, GIDROMETEOROLOGIZAT, 1970, 256 PP

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--LONG RANGE WEATHER FORECAST, ATMOSPHERIC PRECIPITATION,
ATMOSPHERIC CIRCULATION, ATMOSPHERIC TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRA--3005/0184

STEP NO--UR/0900/70/000/000/0001/0256

CIRC ACCESSION NO--AT0132461

UNCLASSIFIED

2/3 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
PART I. CHAPTER I THE MOST RECENT INVESTIGATIONS DEALING WITH GENERAL
ATMOSPHERIC CIRCULATION AND LONG RANGE WEATHER FORECASTS 8. II
CLIMATIC CHARACTERISTICS OF AVERAGE MONTHLY ANOMALIES OF TEMPERATURE AND
TOTAL PRECIPITATIONS IN TRANSCAUCASIA AND THE DAGESTAN ASSR 45. III
CHARACTERISTICS OF MONTHLY ATMOSPHERIC CIRCULATION OVER EURASIA AND
WEATHER CONDITIONS IN TRANSCAUCASIA AND THE DAGESTAN ASSR 54. IV
CHARACTERISTICS OF MACROCIRCULATION ATMOSPHERIC PROCESSES WHICH
DETERMINE THE EXTREME ANOMALIES OF TEMPERATURE (PLUS OR MINUS 20DEGREES
AND MORE) AND ATMOSPHERIC PRECIPITATIONS IN TRANSCAUCASIA AND THE
DAGESTAN ASSR 69. V INVESTIGATION OF EXTREME MONTHLY TEMPERATURE
ANOMALIES IN TRANSCAUCASIA AND THE DAGESTAN ASSR 87. VI POSITION OF
PLANETARY HIGH ALTITUDE FRONTAL ZONES IN EXTREMELY WARM AND COLD MONTHS,
AS WELL AS DURING MONTHS WITH AN EXCESS OR SHORTAGE OF PRECIPITATIONS
109. PART II. CHAPTER I MONTHLY CHARACTERISTICS OF COLD AND HEAT
WAVES IN KUTAISI 114. II MONTHLY CHARACTERISTICS OF COLD AND HEAT
WAVES IN BAKU 150. III SYNOPTIC CONDITIONS IN FORMATION OF COLD AND
HEAT WAVES IN TRANSCAUCASIA AND THE DAGESTAN ASSR 182. PART III.
CHAPTER I INSTRUCTIONS FOR FORECASE OF ANOMALIES OF AVERAGE MONTHLY
TEMPERATURES AND TOTAL PRECIPITATIONS 194. II INSTRUCTIONS FOR
FORECAST OF COLD AND HEAT WAVE PERIODS IN TRANSCAUCASIA AND THE DAGESTAN
ASSR 197. III MAIN STAGES OF OPERATIONS NECESSARY FOR COMPILATION OF
FORECASTS OF ANOMALIES OF AVERAGE MONTHLY TEMPERATURES, COLD AND HEAT
WAVES AND TOTAL MONTHLY PRECIPITATIONS 211. CONCLUSION 212.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

5/3. 016

ARC ACCESSION NO--AT0132461

EXTRACT/EXTRACT--APPENDIX 216. BIBLIOGRAPHY 243.

THE WORK CONTAINS RESULTS OF AN INVESTIGATION OF SYNOPTIC CLIMATIC CHARACTERISTICS OF EXTREME AND NORMAL MONTHLY TEMPERATURES, AN ANALYSIS OF COLD AND HEAT WAVES, MONTHLY TOTAL ATMOSPHERIC PRECIPITATIONS AND METHODOLOGICAL INSTRUCTIONS FOR FORECAST OF THESE ELEMENTS. THE BOOK WAS WRITTEN FOR WEATHER FORECASTERS, AS WELL AS A WIDE CIRCLE OF SPECIALISTS IN FIELDS OF METEOROLOGY, CLIMATOLOGY, AGROMETEOROLOGY AND HYDROLOGY.

UNCLASSIFIED

UDC 619:616.981.51-036.21

USSR

BONDARENKO, G. F., POGREBNIYAK, L. I., DUBROVIN, Ye. I., KHARCHUK, A. N., and SHEPCHENKO, V. U., Ukrainian Scientific Research Institute of Experimental Veterinary Science

"Some Problems of the Epizootiology of Anthrax"

Moscow, Veterinariya, No 6, Jun 73, pp 48-50

Abstract: In the period 1949-1970, the number of outbreaks of anthrax of farm animals, the incidence of anthrax among these animals, and the mortality rate of animals from anthrax decreased in the UkrSSR by factors of 11.1, 12.8, and 11.5, respectively. The incidence of anthrax of cattle increased from 57.2 to 73.8%, with the cattle owned by the population being affected to the principal extent, while that of sheep and goats decreased. Anthrax of hogs increased. The number of outbreaks of the disease and of the animals affected by it during the period under consideration were highest in the forest-steppe zone of the UkrSSR, being followed by the Steppe, Carpathian mountains and foothills, and forest zone, in that order. Of all identified stationary points unsatisfactory from the sanitary standpoint with respect to anthrax, 77.7% have been inactive for more than 11 yrs.

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USSR

BONDARENKO, G. F., et al., Veterinariya, No 6, Jun 73, pp 48-50

The number of such points that were newly recorded decreased vs. 1946 by a factor of 25.7 on the average in 1966-1970 and by a factor of 40 in 1970. One of the conditions that contributes to the persistence of outbreaks is the presence of Bac. anthracis in the soil at locations of old cattle burying grounds. Research is being conducted on the isolation from infected soil of actinomycetes with a heightened antibacterial activity towards Bac. anthracis with the view of applying these actinomycetes for the decontamination of cattle burying grounds.

2/2

USSR

UDC 669.24.42:669.25.42

KHARCHUK, M. D., CHERMENSKIY, V. I., SIDORENKO, R. A., Ural Polytechnic Institute, Department of Semiconductor and Electrovacuum Machine Building

"Desulfurization of Cobalt, Nickel, and Their Eutectic Alloys with Carbon During Crucibleless Zone Melting in a Vacuum"

Ordzhonikidze, Izvestiya vysshikh uchebnykh zavedenii SSSR, Tsvetnaya Metallurgiya, No 3, 1972, pp 47-50

Abstract: A procedure has been developed to obtain superpure cobalt and nickel with respect to sulfur required to study the processes of embossing of graphite in cast iron. The procedure is analogous to that described previously by Chermenskiy, et al. [Izv. AN SSSR, Metally, No 1, 27, 1971]. NKS-0 nickel, KP-1 cobalt, and MGOSCh graphite were used as the initial materials. The sulfur content was controlled by means of the S-35 isotope, additions of which did not exceed $(1-2) \times 10^{-4}\%$. The metals were melted at a displacement rate of the liquid zone (f) of 2 mm/min, and the alloys with carbon, 1 mm/min. Figures are presented showing the distribution curves of the sulfur after 1 and 3 passes through zone melting. The effective distribution coefficients of the sulfur, the coefficients and specific rates of its evaporation in each of the materials near their melting points were determined. In the iron subgroup, the distribution coefficients and the specific rates of evaporation of sulfur decrease from 1/2

- 64

USSR

KHARCHUK, M. D., et al., Izvestiya vysshikh uchebnykh zavedenii SSSR, Tsvetnaya Metallurgiya, No 3, 1972, pp 47-50

iron to nickel; the sulfur distribution coefficients in the corresponding eutectic alloys with carbon vary analogously. After three passes through crucibleless zone melting in a vacuum, nickel was obtained with a sulfur content of $2 \cdot 10^{-5}\%$, and after 5 passes, cobalt containing less than $2 \cdot 10^{-6}\%$ S.

2/2

USSR

UDC 576.311.1

GARYEYEV, P. P., KIARCHUK, O. A., and POGLAZOV, B. F., Laboratory of Bio-organic Chemistry, Moscow State University imeni M. V. Lomonosov, Moscow

"Study of Denaturation of Some Structural Virus Proteins by the Method of Optical Rotatory Dispersion"

Moscow, Biokhimiya, Vol 37, No 6, Nov-Dec 72, pp 1210-1214

Abstract: Aqueous solutions of tobacco mosaic virus protein had an optical activity spectrum in the 230-350 m μ range typical for proteins in organic solvents. The protein denatured to the maximum extent with alkali had an optical activity spectrum characteristic for proteins in aqueous solutions. Solutions corresponding to intermediate stages of denaturation showed a step-wise transition from a virtual organic solvent solution state to an aqueous solution state. The spectra, which were determined on a spectropolarimeter, reflected the relative content of the α -helix on the surface of the protein. In the undenatured globular protein, the α -helix sections were hidden within the globules - i.e., they were in a medium resembling an organic solvent. As denaturation proceeded, the globules unfolded and the contacts of the α -helix parts with H₂O increased.

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USSR

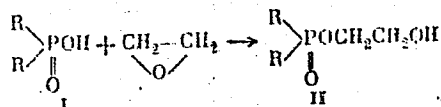
UDC 547.26'118

KARGIN, YU. N., SMIRNOV, A. N., USHCENKO, V. P., and K HARDIN, A. P.

"Synthesis of B-Hydroxyethyl Dialkyl(diaryl)phosphinates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, p 955

Abstract: The addition of ethylene oxide to dialkyl- or diarylphosphinic acid goes easily without a catalyst forming the title product as follows:



for R = CH₃, C₂H₅, C₆H₅. The reaction was carried out in tetrahydrofuran and dioxane solutions and without a solvent. The structure of the product was confirmed by elemental analysis, optical rotation, and IR spectra.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--09DCT70
TITLE--FUNCTIONAL ORGANIC PEROXIDES. V. HALOACYL PEROXIDES -U-
AUTHOR-(04)-SHREYBERT, A.I., KHARDIN, A.P., KIBALNIKOVA, R.I.,
YERMARCHENKO, V.I.
COUNTRY OF INFO--USSR
SOURCE--Zh. Org. Khim. 1970, 6(3) 466-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, ORDNANCE
TOPIC TAGS--ORGANIC PEROXIDE, EXPLOSIVE, BENZENE DERIVATIVE, SODIUM
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1576 STEP NO--UR/0366/70/006/003/0466/0468
CIRC ACCESSION NO--AP0112570
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112570

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. THE REACTION OF 2RCOCL WITH NA
SUB2 O SUB2 GAVE 55-60PERCENT (RCO) SUB2 O SUB2 (R IS ME-CCL SUB2, CLCH
SUB2 CCL SUB2, BRCH SUB2 CH SUB2, OR ME SUB2 CCL). SIMILARLY, 2 RC-OCL
REACTED WITH BZOONA TO GIVE RCO SUB2 OBZ (R AS ABOVE). THESE COMPS.
EXPLODE DURING SOTRAGE AT 20-50DEGREES.

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UNCLASSIFIED

1/2 052 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--THE ACTION OF PULSED SHOCK WAVES ON POLYMERS -U-
AUTHOR--(04)-VINOGRADOVA, N.G., PAVLOV, A.I., PASHKOV, P.M., KHARDIN, A.P.
COUNTRY OF INFO--USSR
SOURCE--REKH. POLIM. 1970, 6(1) 76-80
DATE PUBLISHED-----70
K
SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS
TOPIC TAGS--SHOCK WAVE, POLYMETHYLMETHACRYLATE, NYLON, TEFLON, VIBRATION
EFFECT, COMPRESSIVE STRESS, ANISOTROPY, POLYMER PHYSICAL PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0329 STEP NO--UR/0374/70/006/001/0076/0080
CIRC ACCESSION NO--AP0111523
UNCLASSIFIED

2/2 052

UNCLASSIFIED

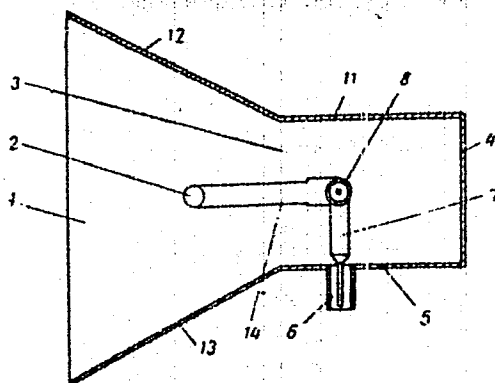
PROCESSING DATE--02DCT70

CIRC ACCESSION N3--AP0111523

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(METHACRYLATE), NYLON 6, OR
TEFLON WERE COVERED WITH A STEEL PLATE AND SUBJECTED TO A SINGLE SHOCK
WAVE IMPACT OR MULTIPLE, VIBRATIONAL IMPACTS. IN THE LATTER CASE A
CHARGE WAS EXPLODED ON THE STEEL PLATE COVERING THE POLYMER, WHICH WAS
SUPPORTED BY ANOTHER STEEL PLATE. DUE TO THE DIFFERENCES IN THE
ACOUSTICAL D. OF STEEL AND PLASTICS THE SHOCK WAVE WAS REFLECTED AND
THE PLASTIC SUBJECTED TO REPEATED COMPRESSIONS. THE METHOD PERMITTED
TO APPLY SMALLER THAN OR EQUAL TO 350 KILOBARS PRESSURE TO THE POLYMERS
WITHOUT DESTRUCTION. SUCH SHOCK WAVES DECREASED THE ANISOTROPY OF
POLYMERS AND THEIR D.

UNCLASSIFIED

AA0043368



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19761628

QC

USSR

UDC 621.372.85(088.8)

KHARECHKIN, N. A., ARASLANOV, D. F.

"Power Divider"

USSR Author's Certificate No 248803, Filed 8 Jun 67, Published 15 Jan 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B151P)

Translation: The proposed coaxial power divider contains an outer tube and three quarter wave coaxial sleeves which are closed by ring connectors at the base on the outer tube, an inside conductor and 16 coaxial outputs of identical wave impedance which are arranged on the outer tube in different cross sections of the divider in identical groups of four outputs each with an interval between cross sections equal to the height of the sleeves. The internal conductor of the four coaxial outputs on the base of the divider are connected to the internal conductor of the divider. The internal conductors of the remaining 12 outputs are connected in groups of four to the three $\lambda/4$ -sleeves. The wave impedances of the four sections of the divider coaxial are equal to the total loads connected to these segments, and they increase stepwise from the base to the input of the divider as the loads are connected. Variation of the wave impedance is achieved in steps by varying the diameter of the inside conductor of the divider or by varying the outside diameter of the coaxial. The power coming to the divider input

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USSR

KHARECHKIN, N. A., et al., USSR Author's Certificate No 248803, Filed 8 Jun 67, Published 15 Jan 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B151P)

is divided evenly between the groups of outputs and all the outputs of the divider. The phase at the divider outputs is delayed with respect to the phase at the input by an amount proportional to the ratio of the length of the coaxial from the divider input to the corresponding output to λ . The phase shift between the first group of outputs from the divider input and all the remaining ones increases from group to group by 90° on the middle frequency of the operating band. The design of the divider insures an increase in its wide band nature and improvement of uniformity of power division. There is one illustration.

2/2

USSR

TIMOFEYEV, A. V., UDOVICHENKO, S. P., KHARICHEV, V. V., SHMIDT, A. A.

"Full and Continuous Systems of Invariants in a Pattern Recognition Problem"

Vestn. Leningr. Un-ta [Herald of Leningrad University], 1972, No 19, pp 143-144 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V700, by the authors).

Translation: A problem of recognition of classes of images which are invariant relative to groups of transforms is studied. Definitions are presented and full and continuous systems of invariants of the group of shifts, rotations and similarity transforms frequently encountered in applied pattern recognition problems are constructed.

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- 105 -

UDC: 8.74

USSR

TIMOFEYEV, A. V., KHARICHEV, V. V., SHMIDT, A. A., YAKUBOVICH,
V. A.

"A Problem in Pattern Recognition and Description"

Kiev, Biol., med. kibernet. i bionika, sbornik (Biology, Medical Cybernetics and Bionics--collection of works), 1971, pp 364-375 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V660 by E. Vagner)

Translation: In the teaching mode, images are presented to a computer, each of which is accompanied by its "description" in word form. The "content" of the words of the descriptions is not communicated to the computer, and it learns on its own to "understand" the simplest concepts. In the recognition mode, only the images are presented to the computer; the machine itself constructs their descriptions, which become the "output". In this connection, the computer also constructs descriptions which have not been presented during teaching. The words of the description are broken down in the teaching process into "adjec-

1/2

USSR

TIMOFEYEV, A. V. et al., Biol. med. kibernet. i bionika, 1971,
pp 364-375

tives" associated with different groups of image transformations, and "nouns" which are invariant with respect to these groups. Each image is a set of n points, where n is always less than some fixed N . In other words, a set of n complex numbers is assigned. A family of transformations consisting of a group of rotations about the coordinate source, similarity transformations, and horizontal and vertical translations can be applied to this set. A complete system of invariant functions can be constructed, which are given on the set of all images and do not change their value with any transformations of any image. In the recognition mode, the computer calculates the values of the invariants of the image presented, compares them with the corresponding values for the images of the teaching sequence, and determines the noun of the description. Then, in accordance with the recognition of the center of gravity of the image, its dimensions, and the angle of turn, the adjectives are found.

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UNCLASSIFIED

PROCESSING DATE--16OCT70

1/2 012

TITLE--EFFECT OF POWDERED ADDITIVES ON THE PROPERTIES OF AMMONIUM NITRATE

-U- AUTHOR-(04)-GANZ, S.N., VILESOV, G.I., DOBROVOLSKIY, YE.I., KHARICHKOV,

I.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR, 1970, (1), P 10-11

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--AMMONIUM NITRATE, WASTE CHEMICAL CONVERSION, ZINC OXIDE, MAGNESIUM, CALCIUM CARBONATE, CALCIUM SULFATE, MINERAL FERTILIZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0385

STEP NO--UR/0436/70/000/001/0010/0011

CIRC ACCESSION NO--AP0113303

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 012

CIRC ACCESSION NO--AP0113303

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WASTE FROM PRODUCTION OF ZNO
PIGMENT AND SLIME FROM MN MINES WERE DRIED AND MIXED IN THE RATIO OF 3
TO 2 AND AN EQUAL AMT. OF CaCO₃ SUB3 PLUS CaSO₄ SUB4 WAS ADDED. THIS
MIXT., CONTG. ALL TRACE ELEMENTS REQUIRED FOR FERTILIZING, WAS ADDED TO
NH₄ SUB4 NO SUB3 (1, 3, 5, OR 6PERCENT) TO PROLONG THE STORAGE LIFE OF
THE FERTILIZER. THE AGRONOMIC EFFECTIVENESS WAS INCREASED BY
8-15PERCENT.
FACILITY: DNEPROPETROVSK. KHIM.-TEKHNOL. INST.,
DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70
 TITLE--OSCILLOPCLAFOGRAPHIC DETERMINATION OF THE COMPOSITION OF NICHROME
 FILMS SPRAYED ON A SOLID SUBSTRATE IN VACUO --U--
 AUTHOR--(04)--DYAKOVA, A.P., SEMYACHKO, G.YA., KHARIN, A.N., DYAKOV, V.I.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 593-6
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--POLAROGRAPHIC ANALYSIS, NICKEL, CHROMIUM, METAL COATING,
 CHEMICAL ANALYSIS, NICHROME ALLOY
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3004/C954 STEP NO--UR/0060/70/043/003/0593/0596
 CIRC ACCESSION NO--AP0131539
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 023

CIRC ACCESSION NO--A0131539

ABSTRACT/EXTRACT--(U) GP-0-

IN 5-7 ML HCL WITH HEATING AND THE SOLN. WAS EVAPD. THE

OSCILLOPOLAROGRAPHIC ANAL. WAS PERFORMED IN A 1 M NH SUB4 CL PLUS 1M NH

SUB4 CH BUFFER; THE INITIAL VOLTAGE WAS NEGATIVE 0.7 V FOR NI AND

NEGATIVE 1.3 V FOR CR. O WAS REMOVED BY N BUBBLING. THE ERROR WAS

PLUS OR MINUS 3PERCENT.

TAGANKOG, USSR.

ABSTRACT. NICHROME FILM SAMPLE WAS DISSOLVED

AND THE SOLN. WAS EVAPD. THE

OSCILLOPOLAROGRAPHIC ANAL. WAS PERFORMED IN A 1 M NH SUB4 CL PLUS 1M NH

SUB4 CH BUFFER; THE INITIAL VOLTAGE WAS NEGATIVE 0.7 V FOR NI AND

NEGATIVE 1.3 V FOR CR. O WAS REMOVED BY N BUBBLING. THE ERROR WAS

PLUS OR MINUS 3PERCENT.

FACILITY: TAGANKOG. RADIOTEKH. INST.,

UNCLASSIFIED

1/2 CC6 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--OSCILLOPolarographic CHARACTERISTICS OF ARSENIC, III -U-
AUTHOR--(04)--DYAKOVA, A.P., KHARIN, A.N., LOMAKINA, T.P., DYAKOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--Zh. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 917-20
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ARSENIC, POLAROGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0436 STEP NO--UR/0080/70/043/004/0917/0920
CIRC ACCESSION NO--AP0126189
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126189
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMAL CONDITIONS FOR
OBTAINING AN OSCILLOPOLAROGRAPH OF AS(III) WITH 0.004N (NH SUB4) SUB2 SO
SUB4 WERE: INITIAL POTENTIAL MINUS 1.3 V, PEAK POTENTIAL MINUS 1.79 V,
RATE OF APPLYING POTENTIAL 1 V-SEC, STOPS 7 SEC, AND PH 7. THE ESTD.
RELATIVE ERROR IN DETN. OF 1.3 TIMES 10 PRIME NEGATIVE5-2 TIMES 10 PRIME
NEGATIVE4 G-ION AS-L. WAS PLUS OR MINUS 2PERCENT.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DESERT AIR LABORATORY -U-

AUTHOR--KHARIN, N.

COUNTRY OF INFO--USSR *K*

SOURCE--TURKMENSKAYA ISKRA, AUGUST 14, 1970, P 4, COLS 1-4

DATE PUBLISHED--14AUG70

SUBJECT AREAS--METHODS AND EQUIPMENT, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--AERIAL PHOTOGRAPHY, DESERT, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/1785

STEP NO--UR/9026/70/000/000/0004/0004

CIRC ACCESSION NO--AN0138736

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--27NOV70.

CIRC ACCESSION NO--AN0138736

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LABORATORY OF AERIAL METHODS OF THE TURKMEN REPUBLIC WAS FOUNDED IN 1964. ITS MISSION IS TO DEVELOP AERIAL METHODS THAT CAN BE USED IN STUDIES OF DESERTS. N. K. KELL, CORRESPONDING MEMBER OF THE TURKMEN ACADEMY OF SCIENCES, WAS INSTRUMENTAL IN ESTABLISHING THE SOVIET SCHOOL OF AERIAL PHOTO INTERPRETERS. THE AUTHOR CLAIMS THAT SOME OF THE SOVIET FILMS, SUCH AS THE "SPECTROZONAL" FILM, FOR EXAMPLE, ARE SUPERIOR TO THAT OF THEIR WESTERN COUNTERPARTS. THE SOVIET SPECTROZONAL FILM IS SENSITIVE TO THE VISIBLE AS WELL AS INFRARED SPECTRA. THE AUTHOR OF THE ARTICLE HAS COMPILED A MANUAL THAT LISTS THE BEST TIMES OF THE YEAR FOR TAKING AERIAL PHOTOGRAPHS OF CERTAIN REGIONS OF THE SOVIET UNION USING THE NEW FILMS. A. BABAYEV, CANDIDATE OF BIOLOGICAL SCIENCES, HAS DEVELOPED A CARTOGRAPHY TECHNIQUE WHICH EMPLOYS AERIAL PHOTOGRAPHS OF DESERT VEGETATION.

UNCLASSIFIED

1/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--EFFECT OF TEMPERATURE ON A LIQUID VAPOR EQUILIBRIUM IN AN ETHANOL
WATER PROPONAL SYSTEM -U-

AUTHOR--PERELYGIN, V.M., REMIZOV, G.P., KHARIN, S.YE.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 122-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, ETHANOL, WATER, PROPANOL, VAPORIZATION,
THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1554

STEP NO--UR/0322/70/000/001/0122/0126

CIRC ACCESSION NO--AT0107974

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UNCLASSIFIED

-2/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0107974

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL FORMULAS ARE GIVEN FOR
CALCG. LIQ. VAPOR EQUIL. IN AN ETOH-H SUB2 O-PROH SYSTEM AT
50-130DEGREES. THE NOMOGRAMS PRESENTED CAN BE USED FOR THE RAPID DETN.
OF VAPORIZATION AND RECTIFICATION COEFFS. FOR THE COMPONENTS OF THIS
SYSTEM AS A FUNCTION OF COMPN. AND TEMP.

XXXXXXXXXXXX

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--LIQUID VAPOR PHASE EQUILIBRIUM IN WATER FURFURAL AND ETHANOL
FURFURAL SYSTEMS -U-
AUTHOR--KHARIN, S.YE., PERELYGIN, V.M. R
COUNTRY OF INFO--USSR
SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(2) 15-16
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE EQUILIBRIUM, FURFURAL, WATER, ETHANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0209 STEP NO--UR/0328/70/023/002/0015/0016
CIRC ACCESSION NO--AP0106865
UNCLASSIFIED

272 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIQ. VAPOR EQUIL. IN THE 2 TITLE SYSTEMS WAS CONDUCTED BY THE METHOD DESCRIBED IN AN EARLIER REPORT (K., P., AND REMIZOV, 1967), AT 50, 65, AND 80 DEGREES AND AT THE B.P. (760 MM). THE SOLNS. WERE PREPD. FROM REDISTD. WATER, ABS. ETOH, AND FURFURAL (I). THE COMPN. OF THE EQUIL. PHASES WAS DETD. BY ANAL. FOR I BY THE OXIMATION METHOD. IN THE DISTN. OF THE WATER I SYSTEM WITH A LOW CONTENT OF I (SOLNS. OF I IN WATER), I CONSTITUTES THE HEAD FRACTION; WHILE AT HIGH I CONTENTS (SOLNS. OF WATER IN I), IT CONSTITUTES THE TAIL FRACTION. IN THE SYSTEM ETOH-I, I IS THE TAIL FRACTION WITHIN THE WHOLE RANGE OF THE BINARY SYSTEM COMPN. IN BOTH SYSTEMS, THE VOLATILITY OF I IS HIGHER AT HIGHER TEMPS. EQUATIONS ARE DERIVED FOR THE CALCN. OF THE COMPN. OF THE EQUIL. VAPOR IN BOTH SYSTEMS AS A FUNCTION OF THEIR COMPN. AT 50-80 DEGREES AND AT B.P. (760 MM).

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF MELANOIDIN FORMATION ON THE ACID RESISTANCE OF MALT BETA
AMYLASE -U-
AUTHOR-(03)-ZHEREBTSOV, N.A., ~~KHARIN, S.YE.~~ KRAYUSHKINA, E.A.
COUNTRY OF INFO--USSR
SOURCE--PRIKL. BIOKHM. MIKROBIOL. 1970, 6(1), 51-7
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INHIBITION, AMYLASE, HEPARIN, PROTEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0962 STEP NO--UR/0411/70/006/001/0051/0057
CIRC ACCESSION NO--AP0109119
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0109119

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INHIBITORY EFFECTS OF MELANOIDINS ON BETA AMYLASE SEEM TO BE RELATED TO THE POLYANION NATURE OF THESE COMPS. BETA AMYLASE ACTIVITY IN ACID MEDIA WAS STRONGLY REDUCED BY OTHER ACIDIC HIGH MOL. WT. COMPS., INCLUDING HEPARIN, TANNIN, AND PROTEIN DEAMINATED BY THE VAN SLYKE METHOD. INHIBITION OF MALT BETA AMYLASE BY HIGH MOL. WT. ACIDIC COMPS. SEEMS TO DECREASE WITH INCREASING CONC. OF H PRIME POSITIVE. FACILITY: VORONEZH TECHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--KINETICS OF THE DECOMPOSITION OF SOME AMINO ACIDS IN RELATION TO PH
-U-
AUTHOR--(03)-KHARIN, S.E., KOLCHEVA, R.A., SAPRONOV, A.R.
COUNTRY OF INFO--USSR *K*
SOURCE--FERMENT. SPIRT. PROM. 1970, 36(2), 21-3
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, CHEMICAL DECOMPOSITION, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0795

STEP NO--UR/0071/70/036/002/0021/0023

CIRC ACCESSION NO--AP0119702

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AP0119702
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. BUFFERED SOLNS. OF 0.2 MOLE-L. OF BOTH MONOBASIC AND DIBASIC AMINO ACIDS WERE MADE TO UNDERGO DECOMPOSITION 5 HR AT 130DEGREES AT VARIOUS PH VALUES, ESP. 5-7. THE GREATEST AND FASTEST DECOMPNS. OCCURRED CLOSE TO THE ISOELECTRIC POINT OF THE AMINO ACIDS; BOTH IN THE MORE ACID OR MORE ALK PH REGIONS THE ACIDS WERE MORE STABLE; AT PH 1 THE DECOMP. WAS SLOWED DOWN TO ONE TENTH OF THE VALUE AT THE ISOELECTRIC POINT, AND AT PH 10 THE DECOMP. DROPPED ALMOST TO ZERO. FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHYSICO-CHEMICAL AND THERMOPHYSICAL VALUES OF SOME THREE COMPONENT
SYSTEMS -U-
AUTHOR--(03)--KHARIN, S.YE., SOROKINA, G.S., KHARIN, V.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 58-69
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCULATION, SURFACE TENSION, SPECIFIC DENSITY, FLUID
VISCOSITY, HEAT CONDUCTIVITY, PHYSICAL CHEMICAL PROPERTY, ALCOHOL,
WATER, METHANOL, ETHANOL, ETHYL ETHER, ALDEHYDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0952 STEP NO--UR/0322/70/000/002/0050/0069
CIRC ACCESSION NO--AP0124612
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—A0124612

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. EQUATIONS ARE GIVEN FOR CALCG. D., REFRACTION, VISCOSITY, SURFACE TENSION, AND HEAT COND. OF SYSTEMS H SUB2 O-ETOH-X, WHERE X IS MEOH, PROH, ME SUB2 CHOH, BUOH, ME SUB2 CHCH SUB2 OH, ME SUB2 CH(CH SUB2) SUB2 OH, ACOME, ACOET, ACOPR, ACO(CH SUB2) SUB2 CHME SUB2, ET SUB2 O, ACH, MECH:CHCHO, ETCHO, OR PRCHO. EMPIRICAL COEFFS. OF THE EQUATIONS ARE TABULATED. AV. DIFFERENCES OF CALCD. AND EXPTL. VALUES OF THE PHYS. CHARACTERISTICS DO NOT EXCEED 0.1-0.2PERCENT, MINUS, 5-7PERCENT, MINUS, AND 8PERCENT, RESP. FACILITY:
VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF PARALLEL REACTIONS DURING MELANOIDIN FORMATION -U-
AUTHOR--(03)--KELCHEVA, R.A., KHARIN, S.YE., SAPRONOV, A.R.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., ^KPISKCH, TEKHNOL. 1970, (2), 206-10
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GLUCOSE, ALANINE, PHOSPHATE, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1674

STEP NO--UR/0322/70/000/002/0206/0210

CIRC ACCESSION NO--AT0133579

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

IRAC ACCESSION NO--AT0133579

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT, KINETICS OF DECOMPN. OF D-GLUCOSE (I) AND ALPHA-ALANINE (II) AND OF MELANOIDIN FORMATION WERE MEASURED IN PHOSPHATE BUFFER SOLNS. (PH 3.46-7.97) OF 0.2M I AND (OR) II AT 100DEGREES. A CONSIDERABLE PROPORTION OF I AND II DECREASE DURING MELANOIDIN FORMATION IS DUE TO THEIR DECOMPN. EQUATIONS ARE DERIVED FOR CALCN. OF CONSTS. IN SIMILAR REACTION SYSTEMS. FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHYSICOCHEMICAL AND THERMOPHYSICAL VALUES OF SOME THREE COMPONENT
SYSTEMS -U-

AUTHOR--(03)--KHARIN, S.YE., SOROKINA, G.S., KHARIN, V.H.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 58-69

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CALCULATION, SURFACE TENSION, SPECIFIC DENSITY, FLUID
VISCOSITY, HEAT CONDUCTIVITY, PHYSICAL CHEMICAL PROPERTY, ALCOHOL,
WATER, METHANOL, ETHANOL, ETHYL ETHER, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0952

STEP NO--UR/0322/70/000/002/0058/0069

CIRC ACCESSION NO--AP0124612

UNCLASSIFIED

272 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124612

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EQUATIONS ARE GIVEN FOR CALCG. D., REFRACTION, VISCOSITY, SURFACE TENSION, AND HEAT COND. OF SYSTEMS H SUB2 D-ETOH-X, WHERE X IS MEQH, PROH, ME SUB2 CHOH, BUOH, ME SUB2 CHCH SUB2 OH, ME SUB2 CHCH SUB2) SUB2 OH, ACOME, ACOET, ACOPR, ACO(CH SUB2) SUB2 CHME SUB2, ET SUB2 D, ACH, MECH:CHCHO, ETCHO, OR PRCHO. EMPIRICAL COEFFS. OF THE EQUATIONS ARE TABULATED. AV. DIFFERENCES OF CALCD. AND EXPTL. VALUES OF THE PHYS. CHARACTERISTICS DO NOT EXCEED 0.1-0.2PERCENT, MINUS, 5-7PERCENT, MINUS, AND 8PERCENT, RESP. FACILITY:

VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE FORMATION OF UNIFORM DOSE FIELDS OF HIGH ENERGY BREMSSTRAHLUNG
BY MEANS OF EQUILIZING TARGETS -U-
AUTHOR--(04)--KOVALEV, V.P., KHARIN, V.P., GORDEYEV, V.V., FILIPENOK, S.P.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 49-54
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BREMSSTRAHLUNG, NEUTRON RADIATION, RADIOTHERAPY, ANGULAR
DISTRIBUTION, ALUMINUM, FILTRATION, COPPER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0275 STEP NO--UR/0241/70/015/005/0049/0054
CIRC ACCESSION NO--AP0120964
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0120964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF EXPERIMENTAL STUDIES OF ANGULAR DISTRIBUTIONS OF BREMSSTRAHLUNG AND NEUTRON RADIATION FOR TARGETS FROM COPPER WHICH WAS SELECTED AS A "MODEL" MATERIAL ARE DEPICTED. IN ALTERATION OF THE FORM OF THE TARGET THERE IS SEEN A DISTINCT EFFECT OF "EQUILIZATION" OF THE FIELD OF BREMSSTRAHLUNG. THE PAPER CARRIES THE RESULTS OF EXPERIMENTAL VERIFICATION OF THE INFLUENCE OF THE FACTOR OF ACCUMULATION ON THE DOSE VALUE FOR A COMBINATION OF COPPER TARGET AND ALUMINUM FILTER. THE EXPERIMENTAL RESULTS OF MEASUREMENT OF ANGULAR DISTRIBUTIONS OF NEUTRONS ARE IN ACCORDANCE WITH THE THEORY OF PHOTONEUTRON REACTIONS. THE EFFECT OF THE FORM OF THE TARGET ON THE ANGULAR DISTRIBUTION OF NEUTRONS IS DEMONSTRATED.
FACILITY: INSTITUT MEDITSINSKOY RADIOLOGII ANH SSSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXPERIMENTAL MANUFACTURE OF ALL WELDED PANELS OF THE AVERAGE
RADIATOR PART OF THE PK-38-2 BOILER -U-
AUTHOR-(03)-VIVSIK, S.N., GODZHIYEVA, YE.M., KHARIN, V.P.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, ENERGO MASHINOSTROYENIYE, NO. 2, 1970, PP 32-34
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--WELDING TECHNOLOGY, BIBLIOGRAPHY, STEAM BOILER/(U)PK382 BOILER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1843 STEP NO--UR/0114/70/000/002/0032/0034
CIRC ACCESSION NO--AP0120520
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPERIMENTAL MANUFACTURE OF COMMERCIAL ALL WELDED BLOCKS OF THE AVERAGE RADIATOR PART OF THE PK-38-2 BOILER (270 TONS-HOUR, 140 GAGE ATMOSPHERE, 570DEGREESC) MADE FROM TELESCOPIC PIPES IS CONSIDERED. THE BASIC TECHNOLOGICAL OPERATIONS OF THEIR MANUFACTURE ARE DESCRIBED WITHOUT THE USE OF SPECIALIZED TECHNOLOGICAL EQUIPMENT AND CERTAIN CONCLUSIONS ARE DRAWN CONCERNING THE MANUFACTURE OF ALL WELDED PANELS. ON TABLE, TWO ILLUSTRATIONS, BIBLIOGRAPHY CONTAINS SIX CITATIONS.

UNCLASSIFIED

1/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF A COMPENSATING IMPURITY ON THE HOMOGENEITY OF MERCURY

DOPED GERMANIUM -U-

AUTHOR--(04)-GUZHOVA, I.P., ROMANVCHEV, D.A., CHERKASOV, A.P.,

KHARIONOVSKIY, YU.S.

COUNTRY OF INFO--USSR

K

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 196-200

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM SINGLE CRYSTAL, SEMICONDUCTOR IMPURITY, RESISTIVITY,
PARTICLE DISTRIBUTION, MERCURY, ANTIMONY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/2000

STEP NO--UR/0363/70/006/002/0196/0200

CIRC ACCESSION NO--AP0105074

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105074

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HOMOGENEITY OF RESISTIVITY AND IMPURITY CONC. IN THE TRANSVERSE CROSS SECTION OF GE SINGLE CRYSTALS DOPED WITH HG, PARTIALLY COMPENSATED WITH SB WITH A HG LEVEL OF 0.087 EV WAS INVESTIGATED. THE PRIMARY REASON FOR THE HETEROGENEITY OF THE RESISTIVITY IN THE TRANSVERSE CROSS SECTION OF THE CRYSTALS CONSISTS IN NONUNIFORM DISTRIBUTION OF THE SB DUE TO THE DEVELOPMENT OF THE BOUNDARY EFFECT. THE HG IS DISTRIBUTED UNIFORMLY IN THE TRANSVERSE CROSS SECTION OF THE CRYSTALS, AND THE BOUNDARY EFFECT FOR HG AT A CONC. OF SIMILAR TO 5 TIMES 10 PRIME^{14} -CM PRIME^3 WAS NOT OBSD. THE EFFECT OF HETEROGENEITY OF THE SB ON THE HETEROGENEITY OF THE ELEC. PROPERTIES OF THE CRYSTALS DEPENDS ON THE DEGREE OF CONDENSATION. THE HETEROGENEITY OF THE CRYSTALS AT A LOW TEMP. CAN INCREASE TREMENDOUSLY DUE TO THE EFFECT OF RANDOM ACCEPTORS, IF THE CONC. OF THE LATTER IS CLOSE TO THE CONC. OF THE COMPENSATING IMPURITIES.

UNCLASSIFIED

Mechanical Properties

USSR

UDC 620.186.14:669.14:620.173.385

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KHARISH, Ye. L., ZLOTNIKOV, S. A., YAREMA, S. Ya., HUSLITSKIY, A. B., and
MIZERSKIY, V. L., Institute of Physico Mechanics, Academy of Sciences Ukrainian
SSR

"Effect of Nonmetallic Inclusions on the Impact Strength of Low-Carbon Steel"

Moscow, Metallovedeniye, No 5, May 70, pp 58-60

Abstract: Steel 20 was melted so as to produce specific types of inclusions: lamellar (unsaturated) silicates, aluminum oxide, silicon dioxide, and titanium nitrides. The chemical composition of all heats was in the following ranges (%): 0.19-0.21 C, 0.21-0.23 Si, 0.35-0.37 Mn, 0.1 Cr, 0.16 Ni, 0.011-0.012S, 0.010-0.012 P, and less than 0.01 N. Hydrogen and oxygen content varied from 0.00010-0.00034% and 0.0048-0.022% respectively. Mechanical properties were affected only slightly by the inclusions and had the following values: $13-16-18 \text{ kg/mm}^2$, $YS--27-29 \text{ kg/mm}^2$, elongation--33-35%, reduction in area--66-68.5%, and impact strength--14-16.5 kg/mm^2 . Standard impact test specimens were used for testing.

It was found that the durability of longitudinal samples was better than for transverse samples and at negative temperatures the fatigue strength is greater than at room temperature. The poorest durability was found in samples which had lamellar silicate inclusions in the grain boundaries. The durability of samples

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USSR

KHARISH, Ye. L., et al., Metallovedeniye, No 5, May 70, pp 58-60

containing the other types of nonmetallic inclusions was 1.2 to 2.2 times better. Maximum durability was noted in samples containing alumina inclusions. The relatively favorable effect of these inclusions was evidently caused by the low magnitude of residual stresses developed in the steel due to comparatively small differences in the modulus of elasticity and volume coefficients of thermal expansion of the inclusions and the metallic matrix. High strength of the silica and titanium nitride inclusions and the large difference in the coefficients of expansion of these particles and the matrix cause considerable residual stresses in the inclusions and lead to earlier rupture than in samples with alumina inclusions. Anisotropy was more noticeable in transverse samples when tested at room temperature. Also, with increased stress the magnitude of anisotropy increased.

Lowering of durability in transverse specimens was caused by the presence of stringer inclusions positioned perpendicular to the direction of applied stress. At small loads, the concentration of stresses in the inclusions is less dangerous. As local stresses grow in transverse samples the yield point is reached much sooner than in longitudinal samples. At negative temperatures the steel is more brittle, but the difference in concentration of stresses in longitudinal and transverse samples becomes less significant and their durability is almost the same.

2/2

USSR

GANGRSKIY, Yu. P., KHARISOV, I. F., Joint Institute of Nuclear Research

"Study of Nuclear Reactions ($n, 2n$) and (n, γ) Leading to the Isomeric State of Mo^{93} "

Moscow, Yadernaya Fizika, Vol. 12, No. 5, Dec 70, pp 1117-1120

Abstract: The cross sections for the formation of Mo^{93} nuclei in the isomeric state in ($n, 2n$) and (n, γ) reactions were measured for neutron energies in the range 2.5-3.0 and 13-15 Mev in order to explain the mechanism for the population of the isomer state. It is noted that many cases have recently been observed in which the isomer ratio measured in experiment was considerably different from that calculated on the basis of the statistical model. In the capture of thermal neutrons by In^{113} and In^{115} , the cross section for the formation of the nucleus in the isomer state with spin 8^- was higher than in the state with spin 5^+ ; in the study of spontaneously fissioning isomers it was observed that the isomer ratio is independent of the moment imparted to the nucleus; in another study a high yield of the Mo^{93} nucleus in the

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GANGRSKIY, Yu. P., KHARISOV, I. F., Yadernaya fizika, Vol. 12, No. 6, Dec 70, pp 1117-1120

isomer state with spin $21/2^+$ was observed among fission fragments. The function for the excitation of the reaction $\text{Mo}^{94}(n, 2n)\text{Mo}^{93m}$ is graphed and shows a typical threshold form; it is compared with the excitation function of $(n, 2n)$ reactions calculated on the basis of the statistical model. The computed functions satisfactorily describe the experimental data. A discrepancy between the experimental and calculated cross sections for Mo^{92} for 15 Mev neutrons is attributed to competition of charge particles emitted by the compound nucleus. For the reaction $\text{Mo}^{94}(n, 2n)\text{Mo}^{93m}$, the measured excitation function agrees with the calculated function if the isomer state is taken equal to 10^{-2} . The values of the cross sections for $\text{Mo}^{92}(n, \gamma)\text{Mo}^{93m}$ reactions are tabulated for various neutron energies. The isomer ratio in neutron capture both with an energy of 14.7 Mev and 2.5-3.0 Mev was of the order of 10^{-1} . This value of the isomer ratio could not be explained on the basis of the statistical model of the nucleus. It is concluded that the isomer ratio measured is close to the ratio calculated on the basis of the statistical model only for comparatively low excitation energies of the Mo^{93} nucleus. Such behavior of the isomer ratio is said to indicate the unusual mechanism of the population of the isomer state; the anomalously high isomer ratio is attributed to the fact that the population of all remaining levels of the multiplet leads to the isomer state.

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GANGRSKIY, YU. P., MARKOV, B. N., KHARISOV, I. F., and TSIPENYUK, YU. M.,
Institute of Physical Problems, Academy of Sciences USSR, Joint Institute
for Nuclear Research

"Action of Spontaneously Fissionable Isomeric States of Pu²³⁹ and Am²⁴³
During Inelastic Scattering of Gamma-Quanta"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14,
No 6, 20 Sep 71, pp 370-372

Abstract: Investigating the activation mechanism of spontaneously fission-
able isomeric levels in various nuclear reactions is one of the basic means
of studying the nature of these states. The authors use two possible means
of activating the isomeric state: (1) the activation of levels lying
above the fission barrier (in the energy range of 6-10 MeV), and their dis-
charge using radiation transitions to the levels of the second holes for
the isomeric state; and (2) the activation of levels in the first hole below
the fission barrier (with an energy of 3-6 MeV) and subsequent tunnel transi-
tion to the second potential hole. The results of this article reveal the
possibility of studying the properties of spontaneously fissionable isomers
in reactions of inelastic scattering of gamma-quanta. By using a larger
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GANGRSKIY, YU. P., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoj Fiziki, Vol 14, No 6, 20 Sep 71, pp 370-372

number of test data it is possible to utilize lower activation energies and thus more fully investigate the mechanism of populating the isomeric state and establish the structure of the fission barrier of the nuclei. The article contains 2 illustrations and 9 bibliographic entries.

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USSR

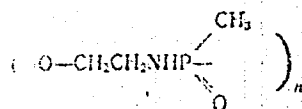
UDC: 547.26'118.07

KHARIN, Ya. A., ZAVENIN, P. M., SHVARTS, A. S., ANDROSOV, V. F., ZAMORA, V. A.,
KOROTKAYA, L. I., Leningrad Institute of the Textile Industry and Light Industry
imeni S. M. Kirov

"A Method of Producing Polyphosphonates"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 26,
1970, Soviet Patent No 276692, Class 12, filed 23 May 69, p 24

Abstract: This Author's Certificate introduces: 1. A method of producing poly-
phosphonates of the formula



where $n \approx 6$. As a distinguishing feature of the patent, diethylamidoanilide of
methylphosphonic acid is interacted with ethanolamine in the presence of heat with
subsequent isolation of the final product by conventional methods. 2. A modification
of the process distinguished by the fact that the process is carried out at a tem-
perature of 100°C.

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UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--MODIFIED P TOLUENESULFONAMIDE, FORMALDEHYDE RESINS -U-

AUTHOR--(05)-MELNIKOVA, YE.P., KOROTKAYA, L.I., ~~KHARIT~~, YA.A., KOROLEVA,
N.G., TAGIEV, B.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,884

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(4)

DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--TOLUENE, SULFONAMIDE, FORMALDEHYDE, POLYCONDENSATION,
CYCLOHEXANONE, CHEMICAL PATENT, PLASTIC PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1055

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

CIRC ACCESSION NO--AA0116521

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HCHO RESINS ARE PREPD. BY
COPOLYCONDENSATION OF HYDROXYMETHYL DERIVS. OF P TOLUENESULFONAMIDE,
HCHO, AND A MODIFIER, SUCH AS CYCLOHEXANONE OR M SULFAMOYL BENZOIC ACID
(I). FACILITY: INSTITUTE OF HIGH MOLECULAR WEIGHT COMPOUNDS,
ACADEMY OF SCIENCES, U.S.S.R.

UNCLASSIFIED

172 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF RESINS BASED ON SULFANILAMIDE AND VARIOUS ALDEHYDES
-U-
AUTHOR--(04)-KOROTKAYA, L.I., KHARIT, YA.A., SHVARTS, A.S., MELNIKOVA,
YE.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (1), 59-63
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--SULFANILAMIDE, FURFURAL, ALDEHYDE, SCHIFF BASE, RESIN,
ACRYLATE, ADHESIVE, THERMAL SHOCK
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1106 STEP NO--UR/0323/70/000/001/0059/0063
CIRC ACCESSION NO--AT0134792
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134792

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ARYLSULFAMIDE RESINS WERE SYNTHESIZED FROM SULFANILAMIDE, FURFURAL, AND PARALDEHYDE VIA THE INTERMEDIATE SCHIFF BASES. RESINS OBTAINED BY THIS METHOD DEMONSTRATED BETTER THERMAL SHOCK RESISTANCE THAN THOSE OBTAINED BY THE DIRECT CONDENSATION OF SULFANILAMIDE AND FURFURAL OR PARALDEHYDE. SOLNS. OF THESE RESINS IN NH SUB4 OH WERE COMPATIBLE WITH ACRYLIC EMULSIONS, SUGGESTING APPLICATIONS AS COMPONENTS IN ACRYLIC COATINGS AND ADHESIVES OF INCREASED THERMAL SHOCK RESISTANCE. FACILITY: LENINGRAD. INST. TEKST. LEGK. PROM. IM. KIROVA, LENINGRAD, USSR.

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UDC 616.5-003.6.05-085.849.19-091

VISHNEVSKIY, A. A., Jr., KHARITON, A. S., MUZYKANT, L. I., and SHERPUTOVSKAYA, K. Ye., Moscow, Department of Pathological Anatomy and Department of Pulmonary Surgery, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Morphological Changes in the Skin After Irradiation With a Pulsed Laser to Remove Tattooing"

Moscow, Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

Abstract: A pulsed neodymium laser (wave length 1.06 A and energy density 80-120 j/cm²) was used to remove tattoos in 113 persons aged 18 to 60. The irradiated skin was covered with a boric ointment dressing until the pigmented tissue was completely lysed and rejected (5-20 days) and then with Vishnevskiy's ointment dressing to promote granulation (3-5 days). The final healing took place under the naturally formed scab. Biopsy samples of pigmented with adjacent normal skin were taken prior to and at various periods up to 60 days after irradiation. Morphological and histochemical examinations of the samples revealed a mild inflammatory reaction, frequent absence of demarcation boundaries, infiltration by lymphocytes and hystiocytes, and a moderate development of granulation tissue. Epithelialization proceeded mainly from the edges of the wound, with new epithelial cells containing large glycogen granules and a 1/2

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VISHNEVSKIY, A. A. Jr., et al., Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

considerable amount of mucopolysaccharides. In 3-4 weeks, the wound was healed completely (approximately the same period as with clean surgical wounds), and fine, smooth, pink, mobile scar tissue of the contour of the tattoo was formed. The underlying young connective tissue was rich in acid mucopolysaccharides but contained no elastic fibers. In 1 year, the scar became quite unnoticeable.

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USSR:

UDC: 519.2:621.391

TERPUGOV, A. F., KHARITONENKO, A. A.

"Determining the Moment of Arrival of Optical Radar Signals With a Photoelectric Receiver. I"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 157-169 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V277)

Translation: Against a background of a Poisson stream of events of constant intensity there may appear an optical radar signal generated by a Poisson stream of variable intensity $\rho\mu(t)$, where $\mu(t)$ is a given function of time determined by the shape of the signal, and ρ is an unknown constant with known a priori distribution. A system of equations is derived for evaluating the moment of arrival of the signal by the method of maximum likelihood, and the properties of this system of equations are studied. From the authors' resumé.

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UDC: 519.2:621.391

USSR

TERPUGOV, A. F., KHARITONENKO, A. A.

"Determining the Moment of Arrival of Optical Radar Signals With a Photoelectric Receiver. II"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 170-179 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V278)

Translation: See abstract 9V277 for part I. The second part deals with estimating the moment of arrival of an optical radar signal on the basis of the function of indeterminacy and the method of maximum likelihood in the case where the signal has a fairly steep front. From the authors' abstract.

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Acc. Nr:

AP0037763

Abstracting Service:

CHEMICAL ABST. 4/70

Ref. Code:

NE0000

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- 79440m Electron paramagnetic resonance study of free radical products of the reaction of ninhydrin with amino acids, peptides, and proteins. Yuferov, V. P.; Francisz, Wojciech; Kharitonenkoy, I. G.; Kalmanson, A. E. (Dep. Biophys., D. I. Ivanovskii Inst. Virol., Moscow, USSR). *Biochim. Biophys. Acta* 1970, 200(1), 160-7 (Eng). EPR was used to study free radical products formed in the reaction of ninhydrin with amino acids and peptides. The EPR spectra of free radicals were characteristic of various amino acids and N-terminal amino acids of peptides. The anal. of these spectra showed that their hyperfine structure was produced by interaction of the unpaired electron with one N nucleus and protons which were a part of structure of the free radical products. The yield of free radicals depended on pH of the medium and on the amt. of H₂O and O in the reaction mixt. Specificity of spectra permits use of EPR to identify amino acids and N-terminal amino acids in peptides.

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UDC 532.52.63

STRUMINSKIY, V. V., KHARITONOV, A. M., CHERNYKH, V. V., Novosibirsk

"Experimental Study of the Transition of a Laminar Boundary Layer of a Turbulent Boundary Layer at Supersonic Velocities"

Moscow, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 30-34

Abstract: Experiments on the effect of the unit Reynolds number on the transition of a laminar boundary layer into a turbulent boundary layer under supersonic flow of a plane plate in wind tunnels with different dimensions of the working elements are described. It is noted that experimental data in the literature present a fairly clear picture of the effect of the unit Reynolds number (U/ν , where U is the velocity and ν is the coefficient of kinematic viscosity) on the transition to the boundary layer, but that the results of these studies were conducted over a relatively narrow range of unit Reynolds numbers (up to $23 \cdot 10^6 \text{ m}^{-1}$) and it was therefore of interest to study the effect of the unit Reynolds number on the transition in a wider range of U/ν . New results were obtained on the transition of the laminar boundary layer into a turbulent boundary layer on a plane plate at $M = 3$ and 4 over a wide range of variation in unit

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STRUMINSKIY, V. V., et al, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 30-34

Reynolds numbers $(10-74) \cdot 10^6 \text{ m}^{-1}$. A stabilization effect which appears earlier in wind tunnels with greater dimensions of the working element was observed for large values of the unit Reynolds number. The position of the transition region in different wind tunnels was fairly well defined by the number Re_D for small values of the unit Reynolds number, where $Re_D = UD/\nu$ and D is the dimension of the working element of the wind tunnel. Data from experiments with five different wind tunnels are presented.

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USSR

UDC 533.607.11

BELYANIN, B. V., KHARITONOV, A. M., CHUSOV, D. V.

"Study of the Flow Characteristics After Exit Cones with Large Expansion Angles"

Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 54-57

Abstract: A study was made to obtain data on the flow characteristics in the forechamber after exit cones with large angles of expansion and large area ratios in the presence of various equalizing and deturbulizing devices. The studies were performed on a special test unit which was equipped with replaceable exit cones with angles of expansion of 6, 45 and 90° with fixed area ratio of 14. Equalizing lattices, a perforated cone or longitudinal barriers were installed in the exit cones successively, and in the forechamber, a set of deturbulizing grids. The forechamber 800 mm in diameter and three diameters long ended in a convergent channel with a cylindrical chamber of smaller diameter. In the second chamber the flow velocity was 2.5 times higher than in the forechamber. The equalizing lattices were installed one in the exit cross section of the exit cone with a degree of preparation of 37%, two at a distance of 1/3 and 2/3 of the length of the exit cone from the intake cross section with a perforation of 42 and 43% respectively. The perforated cone with a central angle of 120° was installed in the exit cross section of the exit cone. The Re numbers were varied with respect to the parameters at the intake to the

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BELYANIN, B. V., et al., Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 54-57

exit cone in different experiments in the range from 10^6 to 10^7 . Significant flow pulsations and unsatisfactory uniformity of the velocity field were observed in all cases when studying the velocity field after exit cones with the given angles of expansion without equalizers. The equalizers were studied in an exit cone with an angle of 45° . The characteristics of the degree of non-uniformity of the velocity field in the forechamber $\Delta V_{\text{mean}} / V_{\text{mean}} \%$ (ΔV_{mean} is the mean value of the deviations from the mean velocity in the forechamber, V_{mean} is the mean flow velocity in the forechamber) are tabulated for various equalizers. It was found that $\Delta V_{\text{mean}} / V_{\text{mean}} < 3\%$ is acceptable. The results of multiple measurements of the turbulence level ϵ in the second cross section of the forechamber are tabulated. They show that for identical combinations of equalizers (perforated cone and 7 grids) the degree of turbulence after the exit cones of 8 and 45° is identical in practice. The drag was found to be constant in the investigated range of Reynolds numbers, and the greatest part of the losses are created by the exit cone itself. Exit cones with large angles of expansion can be used with properly chosen equalizers in wind tunnels and other devices.

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USSR

UDC:532.526.2:536.423

KHARITONOV, A. A., Dnepropetrovsk

"The Boundary Layer on an Evaporating Surface"

Moscow, Mekhanika Zhidkosti i Gaza, No 5, Sep-Oct 73, pp 48-53

Abstract: A laminar boundary layer on an evaporating surface of liquid hydrogen, over which molecular oxygen flows, is studied. Pressure p in the boundary layer corresponds to the saturation temperature of oxygen T_0 , which is lower than the temperature of the incident stream T_∞ , but higher than the temperature of the surface of the liquid hydrogen. Under these conditions, oxygen condenses in the boundary layer, forming droplets of liquid oxygen of various sizes. It is assumed in the work that when the gas condenses in its volume, droplets of one size are formed. The droplets of this selected mean size are looked upon as molecules of a heavy gas. This "gas of droplets" is the third component present in the boundary layer.

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1/2 035 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMBINED INFLUENCE OF PULSATING STRAIN AND STATIC TORSION ON THE
CORROSION FATIGUE STRENGTH OF STEEL -U-
AUTHOR-(02)-KHARITONOV, A.N., GAVRILOV, M.P. *K*
COUNTRY OF INFO--USSR
SOURCE--FIZ.-KHIM. MAKH. MATER. 1970, 6(1), 110-11
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CORROSION FATIGUE, METAL AGING, ALLOY DESIGNATION, MEDIUM
CARBON STEEL, FATIGUE STRENGTH, STRAIN, TORSIONAL STRENGTH, TORSION
STRESS, CORROSION RESISTANCE, PULSE RATE/(U)50 MEDIUM CARBON STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0328 STEP NO--UR/0369/70/006/001/0110/0111
CTRC ACCESSION NO--AP0126084
UNCLASSIFIED