

USSR

BYKOV, V. D., et al., Vestnik Moskovskogo Universiteta, Seriya 5, Geografiya, No 2, Mar/Apr 71, pp 117-118

modify the physicochemical and biological properties of the waters accumulating in the water body.

Thirty-five reports and communications were presented at the conference, in which more than 100 specialists from 40 organizations of various cities of the country participated. There was an extremely necessary and useful exchange of information on reservoir research which made it possible to present the main trends of scientific work carried out by scientific research institutes, by planning and industrial institutions, and by institutions of higher learning of the country. All reports were received with great interest and actively discussed by the participants of the conference.

Most speakers at the conference were researchers in the field of water bodies: hydrolimmologists, hydrobiologists, hydrochemists. It is particularly worth noting that in most reports predominated the idea that it is impossible to solve the problem of clean water in water bodies without analysis of the processes taking place in their drainage collecting systems, without protection of the water bodies themselves and, still more importantly, without protection of the basins. Particular attention was directed to this problem in the introductory lecture "Scientific Fundamentals of Quality Control of Surface-Waters  
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USSR

BYKOV, V. D., et al., Vestnik Moskovskogo Universiteta, Seriya 5, Geografiya, No 2, Mar/Apr 71, pp 117-118

Destined for Water Supply", which had been prepared by leading scientists. In this same lecture it was reported that the existing standards of physico-chemical criteria for the evaluation of the water quality are inadequate for guaranteeing the population with high-grade drinking water; the problem of setting up biological criteria was presented, inasmuch as the existing standards of sampling are clearly inadequate. In analyzing the current methods used for calculating water quality, the authors of the report were forced to state that in spite of the fact that methods are available for determining the concentration of pollution in local waters at the spot of sewer discharge, no methods are available for calculating the water quality in a water body as a whole. Consequently, the processes in the interior of the water body of a lake or of a water reservoir have as yet not been sufficiently studied.

The topic of interplay of drainage system and water body served as basis for still another survey report read by Professor L. L. Rossolimo (IG AN SSSR [Institute of Geography, USSR Academy of Sciences]) in which emphasis was placed on the ever increasing eutrophication of lakes and water reservoirs as a result of the annually increasing volume of mineral and organic wastes with the fertilized, agricultural land areas of their drainage systems.

3/5

USSR

BYKOV, V. D., et al., Vestnik Moskovskogo Universiteta, Seriya 5, Geografiya, No 2, Mar/Apr 71, pp 117-118

In a report presented by the Krasnovidov Laboratory of Water Reservoir Research of the Department of Geography, Moscow State University, the importance of the internal processes in water bodies for the transformation of fluvial drainage was discussed. The results of the research led to the conclusion that in spite of the sharp drop in the discharge of suspended debris, dissolved and suspended organic matter, emerging after construction of water reservoirs, the water quality in the under waters was for most of the year impaired. Survey reports by Professor Kh. A. Velner (Tallin Polytechnic Institute) and by the senior scientific associate of the State Hydrology Institute V. A. Znamenskii were devoted to a theoretical method of calculating water quality in bodies of water and laboratory-scale modelling of the latter. Problems of calculating the flow of suspended debris, the importance of upper water vegetation in the self-cleansing processes of water bodies, the behavior of organic and biogenic matter in waters, and the development of novel approaches to the evaluation of water quality were discussed in a number of communications.

A resolution was taken at the Conference, which contained important recommendations for all organizations and specialists working on general and partial

4/5

USSR

BYKOV, V. D., et al., Vestnik Moskovskogo Universiteta, Seriya 5, Geografiya,  
No 2, Mar/Apr 71, pp 117-118

problems of guaranteeing a supply of clean fresh water for the population and  
the national economy.

- END -

CSO: 1841

5/5

- 75 -

Water and Water Treatment

USSR

UDC 543.3:537.533.35+537.533.73

DERYAGIN, B. V., YEVKO, E. I., KISIN, V. I., LUK'YANOVICH, V. M.,  
RABINOVICH, YA. I., CHURAYEV, N. V., and BARONOVA, R. V., Institute of Physical  
Chemistry, Academy of Sciences USSR; and Institute of Crystallography imeni  
A. V. Shubnikov, Academy of Science USSR

"Electron Diffraction Study of Modified Water"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 603-605

Abstract: Modified water (m.w.) was prepared by three processes on a quartz film in order to study the "anomalous component" (a.c.), e.g. that part of the m.w. which is nonvolatile at room temperature. The bulk of the sample is amorphous. The polytypic character of the different crystalline modifications of the a.c., seen earlier in electron micrographs and ascribed to impurities of  $\text{Na}^+$  and  $\text{K}^+$ , was evident in the electron diffraction patterns; in the latter case, however, it could not be correlated with  $\text{Na}^+$  or  $\text{K}^+$ . It was thus assumed that the crystalline part was composed of different contaminants. The diffraction pattern, autoradiographs of tritiated samples, and electron micrographs are included.

1/1

- END -

CSO: 1841-W

1/2 020 UNCLASSIFIED PROCESSING DATE- 20NDV70  
 TITLE--DISLOCATION DENSITY DEPENDENCE OF THE INTERFERENCE ABSORPTION  
 COEFFICIENT OF X RAYS -U-  
 AUTHOR-(02)-KISIN, V.I., STRATAN, I.V.  
 COUNTRY OF INFO--USSR  
 SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1274-5  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--PHYSICS  
 TOPIC TAGS--ABSORPTION COEFFICIENT, X RAY, CRYSTAL DISLOCATION  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--2000/1300 STEP NO--UR/0181/70/012/004/1274/1275  
 CIRC ACCESSION NO--AP0124951  
 UNCLASSIFIED

K

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 020

CIRC ACCESSION NO--A0124951

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANOMALOUS TRANSMISSION IN PERFECT CRYSTALS SHOWS THAT INTERFERENTIAL ABSORPTION COEFF. OF X RAYS INCREASES ALMOST LINEARLY WITH INCREASING CONC. OF DISLOCATIONS. THIS FACT IS EXPLAINED IN TERMS OF A SIMPLIFIED MODEL OF THE DISTRIBUTION OF DISLOCATIONS IN THE CRYSTAL WHICH GIVES A SATISFACTORY AGREEMENT WITH EXPTL. DATA. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED  
K PROCESSING DATE - 1970  
7/2 - 012  
TITLE--SULFUR VULCANIZATION OF RUBBERS -U-  
AUTHOR--(05)-BLGKH, G.A., UTLENKO, YE.V., YUTILOV, YU.M., NAZMEYEV, A.A.,  
KISINA, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 263,133  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZITSY, TOVARNYE ZNAKI 1970;  
DATE PUBLISHED--04FEB70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--SULFUR, VULCANIZATION, RUBBER, BENZIMIDAZOLE, CHEMICAL PATENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1477  
STEP NO--UR/0432/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0123876  
UNCLASSIFIED



2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AA0128876  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SULFUR VULCANIZATION OF RUBBERS  
WAS AIDED BY THE INTRODUCTION OF 0.1-5 WT. PERCENT BENZIMIDAZOLINE  
ACCELERATORS (I) (R EQUALS ALKYL, ARYL, ARYLOXY, ALLYL, FURYL,  
FURYLALKYLENE).

UNCLASSIFIED

Plant Pathology

USSR

UDC 632.911

KISKIN, P. Kh. Doctor of Biological Sciences, and BOLOKAN, V. I., Aspirant, Institute of Zoology, Academy of Sciences, Moldavian SSR, Kishinev

"How to Speed up Forecasts"

Moscow, Zashchita Rasteniy, No 5, 1971, pp 37-38

Abstract: The Institute of Zoology of the Moldavian Academy of Sciences has been working since 1966 on an information retrieval system for use in preparing sound and prompt forecasts of the spread of disease, degree of afestation and extent of injury done to crops by pests and diseases. Information on 12 main pests is obtained at four stations and coded in standard fashion. There are 39 categories of information relating to the pests (18), plant hosts (11), control measures and their effectiveness (7), and other aspects (3). Each category is given a Roman numeral and each index has a different Arabic numeral. For example:

Categories	I	III	XII.....XXXIX
1968 index:	18	06	03
1969 index:	18	06	03

1/2

USSR

KISKIN, P. Kh. et al, Zashchita Rasteniy, No 5, 1971, pp 37-38

This means that in 1968 and 1969 at Novoanensk station (I, 18) winter wheat (III, 06) was infested with the ground beetle (XII, 03), etc. The capacity of the system is unlimited, so that categories and indices can be increased when desired. The data can easily be entered on hand or machine punch cards for easy mechanization of the retrieval process for forecast purposes.

2/2

- 21 -

USSR

UDC 576.852.211.095.1(571.1/.5):/616-002.5:19:636.5

SHCHEPILOV, N. S., Professor, KISLENKO, V. N., and L'VOVA, G. F.,  
Novosibirsk Agricultural Institute

"Survival of Mycobacterium tuberculosis in a Thick Permanent Litter  
Inhabited by Tuberculous Birds"

Moscow, Problemy Tuberkuleza, No 8, 1971, pp 78-81

Abstract: Thick sawdust litters (similar to those used on Siberian farms) inhabited by tuberculous ducks in unheated facilities were investigated over a period of 6 years. In winter, the litter was frozen 100 cm deep, and in summer its internal temperature was about 23°C and humidity up to 40%. The sawdust contained large amounts of nitrogen, phosphorus, potassium, and digested proteins and up to 0.26% sodium chloride. Bacteriological tests were performed on samples taken from the surface of the litter and from layers 10, 20, 40, and 80 cm deep. One gram of dry sawdust contained up to 14 million various microbes, including Mycobacterium tuberculosis, which remained viable and pathogenic for chickens, rabbits, and guinea pigs throughout the investigation. It is concluded that this type of litter does not meet current sanitary standards.

1/1

USSR

KISLENKO, Yu. I.

"Information-Logic System as a Model of the Verbal Behavior of Man in a 'Question-Answer' Situation"

Nauch.-Tekhn. Inform. Sb. Vses. In-t Nauch i Tekhn. Inform. [Scientific and Technical Information. Collection of All-Union Institute of Scientific and Technical Information], 1972, Ser. 2, No 11, pp 3-9 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V631).

Translation: A class of information-logic systems is studied: systems allowing information to be synthesized which is not contained in the system in explicit form. The information language of the system is looked upon as a certain modification of the language of RX codes; a classification of questions is presented, both from the standpoint of structural variety and from the standpoint of semantic agreement with a certain piece of information. The basic principles of functioning of the system are described.

1/1

USSR

UDC: 532.529

KISLER, S.YA. and FISHKIN, B.S.

"On Increasing Range of Concentrations Measured by Electric Contact Dust Counter"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 11-12 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1209)

Translation: The design of a pickup for an electric contact dust counter was developed, it increases considerably the range of concentrations that can be measured without affecting the linear characteristic of the dust counter. With the new pickup design, clean ejecting gas is used to dilute the aerosol, so that the concentration of the mixture in the sensor zone is reduced to the allowable value.

With this pickup design the upper limit of the concentrations that can be measured depends on the allowable flow of ejecting gas. The pickup of the dust  
1/2

USSR

KISLER, S. YA. and FISHKIN, B. S., 11-ya Vses. Konf. po Vopr. Ispareniya, Gorennya i Gaz. Dinamiki Dispersn. Sistem, 1972, p 11-12

counter consists of an ejector with helical peripheral nozzles. The mixing chamber of the ejector is confined by the inside surface of the sensor. The current of charges appearing on the sensor which is energized is proportional to the concentration of dispersed phase, with constant flow of aerosol sucked into the ejector. The new pickup design has a short gas-dust travel which decreases the probability of clogging up by dispersed particles. The peripheral nozzles of the ejector made it possible to design it so as to minimize the abrasion of parts affecting the measurement accuracy. A new vibration-proof measuring diagram was used in the above described dust counter.

2/2

- 105 -

USSR

UDC 577.4

KISLER, V. M.

"Partial Method of Convex Programming"

V sb. Issled. operatsiv (modeli, sistemy, resheniya), Vyp. 1 (Operations Research (Models, Systems, Solutions), Vyp. 1 -- collection of works), Moscow, Computation Center of the USSR Academy of Sciences, 1970, pp 10-18 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V499)

No abstract

1/1



USSR

UDC: 621.384.6.01

KISLETSOV, A. V. and LEBEDEV, A. N.

"Electron Beam Autophasing in Delay Systems"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 4, 1972, pp 699-704

Abstract: The question of particle autophasing is an important one in the modern technique of using a heavy flow of relativistic electron beams in accelerators. This article demonstrates the possibility of obtaining stable electron pulses which are autophased under the action of characteristic fields alone. It also explains the fundamental characteristics of these pulses by considering the often used model of real systems in the form of a smoothly cylindrical waveguide filled with a dielectric without dispersion. To avoid complicating the problem, transverse motion is ignored by considering that the beam is acting under a strictly longitudinal magnetic field. Curves are plotted for the initial beam energy as a function of the beam current. The authors express their gratitude to A. A. Kolomenskiy for his interest in the work, and to V. S. Voronin for his comments; A. V. Agafonov is also mentioned for participating in the research. They are connected with the P. N. Lebedev Physics Institute in Moscow.

1/1

- 37 -

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--USE OF AN OMEGATRON DURING A STUDY OF THE PHOTOLYSIS OF SOLID  
COMPOUNDS -U-  
AUTHOR-(04)-ZAKHAROV, YU.A., KISLIN, G.A., KLESHINA, X.X., SINITSIN, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 532-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--OMEGATRON, MASS SPECTROMETER, CHELATE COMPOUND, ELECTRIC LAMP,  
SODIUM COMPOUND, CHLORATE, NITRATE, LEAD COMPOUND/(U)RMO4S LAMP  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0889 STEP NO--UR/0076/70/044/002/0532/0533  
CIRC ACCESSION NO--AP0137917

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITIES OF USING AN OMEGATRON MASS SPECTROMETER FOR DETG. THE COMPN. OF ULTRASMALL AMTS. OF PHOTOLYSIS PRODUCTS, THE SPECTRAL BOUNDARY, AND THE SPECTRAL SENSITIZATION OF THE PROCESS WERE STUDIED. THE CONNECTION OF THE OMEGATRON WITH OIL PUMPS PRODUCES UNSTABLE READINGS EVEN IN THE CASE OF USING TRAPS WITH LIQ. N. MORE EXACT RESULTS ARE OBTAINED WITH A REACTION CELL AND AN RMD 4S LAMP WITH A TI SORPTION PUMP USING AN INSULATION WITH THE AID OF IN,GA PLUGS. THE OMEGATRON CAN BE USED FOR STUDYING THE COMPN. AND DECOMP. OF PHOTOCHEM. STABLE PRODUCTS LIKE METAL CHLORATES AND NITRATES. THE PRINCIPAL PRODUCT OF NACLO SUB3 DECOMP. IS O. THE INCREASE IN THE FLUX OF IONS WITH THE MASS NOS. OF 44 AND 28 IS DUE TO AN INCREASE IN O CONC. AND THE BURNING OF THE CATHODE OF THE RMD 4S LAMP. THE OMEGATRON IS USEFUL FOR DETG. THE SPECTRAL BOUNDARY OF THE BEGINNING OF PHOTOCHEM. DECOMP. THAT TAKES PLACE AT A VERY LOW RATE. THE BOUNDARY OF PHOTOACTIVE LIGHT IS DETD. FOR PBN SUB6. THE OMEGATRON CAN ALSO BE USED FOR OBTAINING INFORMATION ON THE SPECTRAL AND CHEM. SENSITIZATION OF SOLID SALTS WITH THE AID OF DYES.

FACILITY: TOMSK. POLITEKH. INST. IM. KIROVA, TOMSK, USSR.

UNCLASSIFIED

KISLITSIN N.V.

Drinker, A. S., Krasovskiy, R. R.	Reception of a Fluctuating Optical Signal .....	164
Vaytsel', V. I.	Optimization of an Optical Heterodyning System	152
Shehlikanov, K. N.	Analysis of the Synchronization of an Optical Communication Channel with Time Division Multiplexing of the Pict Trunks .....	159
Litvinova, T. P., Lobkova, L. H.	Frequency-Space Correlation Function of the Amplitudes of Waves Propagated in a Locally Isotropic Turbulent Atmosphere .....	166
Lobkova, L. H., Chistyakov, A. B., Lobkov, M. M.	Effect of Amplitude and Phase Field Distribution at a Laser Output on the Spatial Coherence of the Laser Emission .....	174
Lobkova, L. H., Chistyakov, A. B., Lobkov, M. M.	Fast and Slow Fluctuations of the Angles of Arrival of Laser Emission .....	181
Kislitsin, N. V., Podubnyy, V. V.	Statistical Description of Hermitian and Laguerre Photon Fluxes .....	189
Kislitsin, N. V., Podubnyy, V. V., Pulemin, V. P.	Quantum Mechanical Description of Some Proceed- ures of Nonparametric Statistics .....	194
Podubnyy, V. V., Tizvoshenko, B. Ye.	Potential Accuracy of Measuring the Angular Position of Photon Source .....	198
Yeliseyev, P. G., Ismailov, I. I., Fedorov, Yu. F., Kozarova, L. O.	Application of Semiconductor Lasers For Multichannel Optical Communications .....	202
Sviridovskiy, V. L., Karpenko, S. G., Biryagov, A. V.	Relaxation of the Discrepancy Functions of a Quasimonochromatic Signal and Its Amplitudes ..	205
Derjugin, I. A., Kuznetsov, V. N.	Optimization of Optical-Band Quantum Counting Systems .....	210
Adrianova, I. I., Brodovich, N. A., Zhomskiy, V. B., Danilov, B. S., Hesterova, Z. V., Petrova, A. V., Popov, Yu. V., Kozanov, R. N.	Laser Emission Modulation .....	221

41

**TECHNICAL TRANSLATION**

153

AM9 / PSTCAIT-23-2015-72

29 Jul 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION  
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,  
SEPTEMBER 1968

RUSSIAN TITLE: ПРОБЛЕМЫ ПЕРЕДАЧИ ИНФОРМАЦИИ ЛАЗЕРНЫМ ИЗЛУЧЕНИЕМ

AUTHOR: I. A. DERUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY  
INENI T.G. SCHECHENKO

Translated for FSTC by ACBI

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File Page

USSR

UDC 548.4

2

MINTS, R. I., KORTOV, V. S., MELEKHIN, V. P., KISLITSIN, Ye. A.,  
PLEKHANOVA, E. A., and PESHCHIN, G. F., Ural Polytechnic Institute  
imeni S. M. Kirov

"Effect of Deformation on Electron Work Function and Exoemission From  
Surface of Noble Metals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970,  
pp 37-42

Abstract: The article describes results of a study of regularities in the exoemission effect in the deformation of noble metals (silver, gold, platinum, and palladium). Changes in the electron work function and exoelectronic emission of the metals were studied under various types of deformation (tension, grinding, polishing). The electron work function was studied by measuring the contact potential difference by the dynamic capacitor method. The results indicate that plastic deformation due to surface tension and machining is accompanied by a decrease in the electron work function. This means that there is a

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USSR

MINTS, R. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy --  
Fizika, No 7, 1970, pp 37-42

decline in the potential barrier value and an increase in the probability of electron emission. This effect manifests itself in the appearance of exoelectronic emission, the intensity of which depends on the degree of deformation. Simultaneous measurement of these quantities makes it possible to establish the interrelationship between the changes observed in the surface electric properties and disturbance of the surface structure and the physicochemical processes initiated by deformation.

2/2

USSR

UDC 771.531.37.778.33

2

BOGDANOV, L. M., GRECHKO, M. K., DONSKAYA, S. A., ZHORRES, V. I.,  
KISLITSYN, V. K., and NEFEDCHENKOV, V. M., Shostinskiy Branch, Gosniikhimfoto-  
proyekt Shostinskiy Chemical Combine

"A New X-Ray Film for Rapid Machine Processing"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii, Vol 18, No 4, 1973, pp 306-  
307

Abstract: The Shostinskiy branch of the Gosniikhimfotoprojekt and the Shostin-  
skiy Chemical Combine completed in 1972 the development of a new medical X-ray  
film, the RM-1 "M" which, in distinction from the series-produced RM-1 medical  
X-ray film, is suitable for rapid machine processing. The specifications of  
this new film are similar to those of the East German Supervidox Roentgen  
Film/x-ray. The emulsion layer of the RM-1 "M" film is thinner than that of  
the RM-1 film, and of the RM-1T film that is being produced in series for  
tropical use; the emulsion layer of the new film is capable of withstanding  
the severe temperature conditions of machine processing. During machine pro-  
cessing, each of the operations of developing, fixing, washing, and drying  
require 45 seconds. The RM-1 "M" film has been tested for machine processing  
with entirely satisfactory results, and is now being produced in series.  
2 tables. 2 references.

1/1



Acc. Nr:

**A70040576**

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4-76 UR 0020

K

83522g Formation of a eutectic phase during contact fusion.  
 Khrenov, K. K.; Rossoshinskii, A. A.; Kislitsyn, V. M.  
 (Inst. Elektrosvariki im. Patona, Kiev, USSR). ~~Dokl. Akad. Nauk SSSR~~  
*Nauk SSSR* 1970, 190(2), 402-3 [Chem Technol] (Russ). The  
 process was studied by compressing a perfect single crystal of  
 Si and a Au foil 100- $\mu$  thick. The 2 were compressed between 2  
 plungers preheated to 400°, which exceeds somewhat the temp.  
 of the eutectic Au-Si. To follow the process, the plungers were  
 moved apart periodically. The process then proceeded as fol-  
 lows. First, some defects appeared, such as dislocations, and  
 microcracks were formed on the surface of the Si. These de-  
 fective spots were satd. with Au up to stoichiometric compn. of  
 the eutectic. These spots enlarged to a point where they formed  
 nuclei of the liq. phase, and finally the eutectic spread over the  
 contact area and inside the crystal. M. Hosh

LD

+

REEL/FRAME

18

19750097

USSR

UDC: 539.5

Balter, M. A., Gol'dshteyn, L. Ya., Stennik, V. I., Kislyitsyn, V. P., Kharkov

"Brittle Rupture Resistance of High-strength Steels in Various Structural States"

Kiev, Problemy Prochnosti, No 4, Apr 72, pp 76-80.

Abstract: The influence of composition, structure and mechanical properties of structural steels on brittle rupture resistance during testing of notched specimens and specimens with preliminarily applied cracks in static bending is studied. It is shown that the method of testing by static bending of specimens with a crack is quite sensitive for evaluation of the brittle strength of high-strength steels in various structural states.

1/1

USSR

UDC 547.26'118

TARASOVA, R. I., KISLITSYNA, R. M., and PUDOVNIK, A. N.

"Reaction of the Isocyanate of Diethylphosphorus Acid With Aldehydes"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1972-1976

Abstract: The reaction of diethylphosphorus acid isocyanate with benzaldehyde, p-chloro- and p-bromobenzaldehyde yields crystalline cyclic diethoxyalkylphosphazo carbonates and polymeric 1:1 adducts; the latter are formed on heating the cyclic diethoxybromobenzylphosphazo carbonate to its melting point. Analysis of the reaction products reveals two ethoxy groups. The IR spectra of the reaction products of diethylphosphorus acid isocyanate with p-bromobenzaldehyde show absorption at  $1350\text{ cm}^{-1}$  for P=N and absorption at  $1710\text{--}1720\text{ cm}^{-1}$  for the group C=O. Reactions with anisaldehydes and other aldehydes yielded oily products consisting of two fractions. According to analytical data, both fractions could be the addition products of diethylphosphorus acids isocyanates and aldehydes in a 1:1 ratio. Both have identical IR spectra, which greatly differ from those of crystalline 1:1 adducts. The IR spectra of the oils show absorption at  $1260\text{--}1265\text{ (P=O)}$ , at  $1735\text{--}1746\text{ (C=O)}$  and  $3200\text{--}3400\text{ cm}^{-1}\text{ (NH)}$ .

1/1

AA0038342

Kislitsin, Ye, M.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

237668 SLAG from steel production is prepared for use in structural materials by coarsely comminuting the slag, removing the residual metal by means of a magnet; keeping the slag in damp state for 3-5 days by moistening it with water; finely comminuting the material; and repeating the magnetic separation of the metal. The storage in the damp state presents a subsequent self-disintegration of the slag to powder, and thus improves its properties as a structural material. 2.10.67. as 1185558/29-33. N N OVCHINKIN et alia Chelyabinsk Metallurgical Plants Design Inst. (16.6.69.) Bul.8/12.2.69. Class 80c. Int.Cl. C04b.

LD

18

1/2

19731456

AA0038342

AUTHORS: Ovchinkin, N. N.; Kislitsin, Ye. M.; Kozlov, V. I.;  
Likhacheva, T. F. and Kaygorodova, T. A.

Chelyabinskiy Gosudarstvennyy Institut Proyektirovaniya  
Metallurgicheskikh Zavodov

2/2

19731457

USSR

UPC: 621.396.677.7(088.8)

KISLOV, A. G., SOKOLOV, N. F., Leningrad Military Engineering Academy imeni A. F. Mozhayskiy

"A Coaxial Radiator"

USSR Author's Certificate No 250226, filed 17 Jul 67, published 16 Jan 70 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B67 P)

Translation: The proposed radiator consists of an asymmetric dipole which supplies a coaxial feeder with a slot cut in its outer rigid shell, and a disc back reflector. The radiator is designed for setting up circular field polarization. The dipole provides the vertical component of the electric field, and the slot provides the horizontal component. The dipole should be shorter than a  $\frac{1}{4}$ -wavelength for its input impedance to be capacitive, and the slot should be shorter than a  $\frac{1}{2}$ -wavelength for its input impedance to be inductive. By trial and error, the lengths of the dipole and slot are selected to give a phase shift of close to  $\pi/2$  between the vertical and horizontal components of the radiated electromagnetic field, which is necessary to produce circular polarization. By locating the dipole and slot on one side of the axis of the coax feed line and using an unbalanced dipole, the phase center of the radiator is shifted from the axis of symmetry of the feed line. This

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KISLOV, A. G. et al., USSR Author's Certificate No 250226

makes it possible to rock the radiation pattern of the antenna by rotating the radiator about the axis of symmetry without moving it away from the focal axis of the paraboloid. The simplicity of the radiator design is noted. One illustration.  
A. K.

2/2

- 40 -

C. Application of Theoretical Probability  
and Statistical Methods

USSR

UDC: 519.2

KISLOV, A. M., LIVSHITS, E. M.

"Comparing the Effectiveness of Two Statistical Modeling Schemes  
in Transport Problems"

Khar'kov, Vychisl. mat. i vychisl. tekhn.--sbornik (Computational Mathematics and Computer Technology--collection of works), vyp. 3, 1972, pp 97-102 (from RZh-Kibernetika, No 5, May 73, abstract No 5V250 by the authors)

Translation: The paper deals with the question of using a Monte-Carlo method to calculate the probability that a particle will reach a predetermined position in some simple physical systems when schemes of direct modeling of trajectories and modeling with weights are used. Theoretical estimates of the effectiveness of the given modeling schemes are established for these systems, and a comparison is made of effectiveness with different geometric and physical parameters of the system.

1/1



KISLOV, A. N.

biophysics

UNCLASSIFIED

SECTION III SO: Selected Research Papers

FRANKE

PCS-29

SEPT 71

Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute.

These personalities, the subjects of the articles, and the dates are given

below:

All-biophysics / Physiology

<u>Allyeva, S. A.</u>	radiation effect	1971 (34)
<u>Aplkayeva, G. F.</u>	phosphorylation	1970 (39)
<u>Artovov, D. F.</u>	radiation effect	1971 (36)
<u>Azhipn, Ya. I.</u>	hypoxia	1969 (37)
<u>Bregadze, I. P.</u>	radiation effect	1970 (35)
<u>Buzal, Ye. P.</u>	luminescence	1970 (33)
<u>Dachtyeva, T. I.</u>	radiation effect	1970 (39)
<u>Dmitriyeva, V. A.</u>	blood plasma	1969 (40)
<u>Domurava, O. F.</u>	radiation effect	1970 (39)
<u>Dubrov, A. P.</u>	biochemical analysis	1971 (41)
<u>Gabalova, N. A.</u>	muscle physiology	1971 (42)
<u>Gnassaf, Ye. E.</u>	radiation effect	1970 (35)
<u>Ivkova, M. N.</u>	serum albumin	1971 (43)
<u>Kanatikin, V. S.</u>	phosphorylation	1971 (34)
<u>Khokhlova, G. K.</u>	muscle physiology	1971 (44)
<u>Kislov, A. N.</u>	salivary gland	1970 (45)
<u>Klyagina, V. P.</u>	oligonucleotide	1970 (46)
<u>Kozol, B. A.</u>	radiation effect	1971 (44)
<u>Koshaleva, G. N.</u>	biochemical analysis	1971 (41)

6  
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Kuzmina, S. V.	Livine culture	1970 (47)
Markovich, D. S.	Lactate dehydrogenase	1971 (48)
Nedvedeva, I. F.	radiation effect	1971 (44)
Peshkova, L. V.	phosphorylation	1971 (49)
Pronevich, L. A.	antibiotic	1970 (50)
Rodionova, H. A.	mitochondrion	1971 (51)
Shekhpakh, V. N.	phosphorylation	1971 (49)
Skobeyev, Ye. H.	radiation/vibration	1970 (52)
<del>Skobeyev, Ye. H.</del>	radiation effect	1970 (53)
Tsvetkov, V. D.	blood plasma	1969 (40)
Yimikhina, N. V.	lactate dehydrogenase	1971 (48)
Vlencik, M. N.	radiation effect	1970 (53)
Zamyatnin, A. A.	muscle physiology	1971 (42)

(31)

Dubrov and Kosholeva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 32 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (56-59) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, I. V. Stozhenkikhina, V. L. Miasnikina, and A. N. Kudin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--EXISTENCE OF THE REST POTENTIAL OF CELL NUCLEUS OF THE SALIVARY  
GLANDS OF DROSPHILA FUNEBRIS LARVAE -U-  
AUTHOR-(02)-KISLOV, A.N., VEPRINTSEV, B.N. K  
COUNTRY OF INFO--USSR  
SOURCE--BIOFIZIKA 15(1): 99-103. ILLUS. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DROSPHILA, SALIVARY GLAND, CELL PHYSIOLOGY, BIOPOTENTIAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/0920 STEP NO--UR/0217/70/015/001/0099/0103  
CIRC ACCESSION NO--AP0129985  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129985

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALUE OF THE RESTING POTENTIAL OF THE CELL NUCLEUS OF THE SALIVARY GLANDS OF *O. FUNEBRIS* LARVAE DOES NOT EXCEED THE EXPERIMENTAL ERROR (NOT MORE THAN 3-5 MB). THE MAXIMUM SPECIFIC RESISTANCE OF NUCLEAR MEMBRANE EQUALS 10 OHM-CM PRIME2. SEVERAL LEAPS OF THE POTENTIAL OCCUR DURING THE INSERTION OF THE ELECTRODE INTO THE CELL. THESE CAN BE EXPLAINED BY DAMAGE OF THE CELL MEMBRANE (SHUNTING OF MEMBRANE RESISTANCE) AND THE CHANGE OF ELECTRODE POTENTIAL. FACILITY: INST. BIOL. PHYS., ACAD. SCI. USSR, PUSHCHINO-ON-OKA, USSR.

UNCLASSIFIED

USSR

UDC: 533.9.07

ZUBKOV, I. P., KISLOV, A. Ya., and MOROZOV, A. I.

"Optimizing the Parameters of Heavy-Current Ion Accelerators"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 4, 1972, pp 898-900

Abstract: This brief communication demonstrates the possibility of reducing the relative dimension of the ionization zone and increasing the compensation of the output ion angular moment, with the consequent reduction in the angular loss at the output of a two-lens accelerator. Modifications of the accelerator with one, two, and four lenses are investigated and an important result is derived; it is found that the magnitude of the discharge voltage can be increased while the required current is maintained constant. A diagram of the accelerator used in the author's experiments together with oscillograms of the discharge current and voltage is given. Luminograms of the output ion current are also shown.

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USSR

UDC 533.9.07

ZUBKOV, I. P., KISLOV, A. Ya., LEBEDEV, S. V., and MOROZOV, A. I.

"Ion Motion in a Two-Lens Accelerator With 'Closed' Electron Drift"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 51, No 3, Mar 71, pp 526-533

Abstract: Ion trajectories in a two-lens accelerator with closed drift of electrons was calculated, and the distributions of ion current densities in the accelerated channel were measured. The article is a continuation of a description of studies of a high-current quasistationary ion plasma accelerator with closed electron drift. An averaged picture of the motion of the ion component inside the accelerator channel and the region of ionization of the working material (hydrogen) are given. Ion motion was analyzed by two methods: first, ion trajectories were calculated on the basis of experimentally measured distributions of electric and magnetic fields, and then a picture was obtained of the distribution of ion current densities along the channel with the aid of double electric probes. It was concluded from the study that the averaged picture of current density distributions qualitatively agrees with calculations of ion trajectories made on the basis of measurements of electric and magnetic fields in the accelerator

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USSR

ZUBKOV, I. P., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 15, No 3, Mar 71,  
pp 526-533

channel. It was also concluded that the interaction of ions with the magnetic field basically determines the geometry of the ion current. As a result of this interaction, the beam moves close to the outer insulator in the region of the first lens; however, the greater portion of the ions generated in the vicinity of the first lens continued to accelerate in the second lens without collision with the wall.

2/2

USSR

MOROZOV, A. I.; KISLOV, A. YA. K

"Distribution of Total Pressure in a Plasma Emitted from a Quasi-Stationary Injector"

Leningrad, Journal of Technical Physics; April 1970; pp 768-71

Abstract: The article concerns the measurement of the total pressure distribution in the current of a plasma emitted from a quasi-stationary plasma injector with its own magnetic field. The total pressure was measured with a pressure sensor the sensing element of which was a piezoelectric crystal of barium titanate. The authors describe a method of calibrating the pressure sensor by means of a "magnetic" shock. This method makes it possible to determine not only the sensitivity of the sensor but also its own frequency.

In the work it is shown that the nature of the distribution of the total pressure at the output of the injector varies strongly with the polarity of the central electrode; this is caused by the appearance of a "Hall" electrical current within the injector.

The article includes five figures: Figure 1 shows a cross section of the pressure sensor; Figure 2 shows oscillograms of the magnetic field and signals from the piezoelectric sensor; Figure 3 shows the calibration curve; Figures 4 and 5  
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USSR

MOROZOV, A. I.; KISLOV, A. YA, Journal of Technical Physics; April 1970, pp 768-

show the total pressure distributions in the current with negative and positive polarities respectively of the central electrode.

There are three bibliographic references.

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Magnetohydrodynamics

USSR

MOROZOV, A. I.; KISLOV, A. YA.

"Distribution of Total Pressure in a Plasma Emitted from a Quasi-Stationary Injector"

Leningrad, Journal of Technical Physics; April, 1970; pp 768-71

ABSTRACT: The article concerns the measurement of the total pressure distribution in the current of a plasma emitted from a quasi-stationary plasma injector with its own magnetic field. The total pressure was measured with a pressure sensor the sensing element of which was a piezoelectric crystal of barium titanate. The authors describe a method of calibrating the pressure sensor by means of a "magnetic" shock. This method makes it possible to determine not only the sensitivity of the sensor but also its own frequency.

In the work it is shown that the nature of the distribution of the total pressure at the output of the injector varies strongly with the polarity of the central electrode; this is caused by the appearance of a "Hall" electrical current within the injector.

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USSR

MOROZOV, A. I. and KISLOV, A. YA., Journal of Technical Physics; April 1970,  
pp 768-71

from the piezoelectric sensor; Figure 3 shows the calibration curve; Figures 4  
and 5 show the total pressure distributions in the current with negative and  
positive polarities respectively of the central electrode.

There are three bibliographic references.

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51

AUTHOR-- ~~KISLOV, VLADIMIR~~ CORRESPONDENT  
TITLE-- THE CONCEPTION OF A SPACE MOTOR  
NEWSPAPER-- TRUD, FEBRUARY 5, 1970, P 5, COLS 5-7

ABSTRACT-- THE REPORTER RELATES HIS IMPRESSIONS OF A PLANT THAT MANUFACTURES ROCKET MOTORS FOR SPACE VEHICLES. THE FOLLOWING DEPARTMENTS OF THE PLANT ARE MENTIONED-- "DEPARTMENT OF RELIABILITY", "STRENGTH LABORATORY", "DEPARTMENT OF DESIGN", AND ALSO THE OFFICE OF THE "CHIEF DESIGNER". THE PLANT MANUFACTURES AND TESTS LIQUID ROCKET MOTORS FOR VARIOUS SPACE VEHICLES.

ACCORDING TO THE AUTHOR, TWO MOTORS, THE SUSTAINER MOTOR AND BACK UP COUNTERPART, ARE MOUNTED ON THE "SOYUZ" SHIPS. A "SOYUZ" SHIP CAN CARRY ON MANUEVERS UP TO AN ALTITUDE OF 1,300 KM, DEPENDING

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UPON THE FUEL. THE NOZZLES OF SPACE ROCKET MOTORS ARE COOLED BY THE PROPELLENT BEFORE IT ENTERS THE COMBUSTION CHAMBER. THE MOTORS ARE TESTED FOR PERFORMANCE TIME WHICH IS TEN TIMES AS LONG AS THE ACTUAL ONE. THE EXHAUST COLORS OF A TEST MOTOR ARE DESCRIBED AS CHERRY RED, REDDISH-YELLOW, PINK AND BRIGHTLY WHITE WITH A BLUISH HUE /IN THAT ORDER/.

THE AUTHOR CONCLUDES WITH THE STATEMENT THAT "A LIQUID ROCKET MOTOR WILL SERVE MAN IN SPACE EXPLORATIONS FOR SOME TIME TO COME".

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174 037 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SOYUZ 9 CHANGES ITS ORBIT, KISLOV DESCRIBES ORBITAL CORRECTION  
MANEUVER -U-  
AUTHOR--KISLOV, V. *K*  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, TRUC, 5 JUNE 1970, P 3.  
DATE PUBLISHED--05JUN70  
SUBJECT AREAS--SPACE TECHNOLOGY  
TOPIC TAGS--ORBIT CORRECTION, MANNED SPACECRAFT, SPACECRAFT  
MANEUVER/SOYUZ 9 MANNED SPACECRAFT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
DOXY FICHE NO----FD70/605026/F07 STEP NO--UR/9025/70/000/000/0003/0003  
CIRC ACCESSION NO--AN0141548  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

274 Q37

CIRC ACCESSION NO--AN0141548

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

ABSTRACT. WHEN THE "SOYUZ 9" BEGAN ITS FIFTH REVOLUTION AN ORBITAL CORRECTION WAS MADE. THE SHIP MADE ITS FIRST MANEUVER. THIS MANEUVER WAS EXECUTED BY A. NIKOLAYEV USING THE MANUAL CONTROLS. THE PRESENCE OF AN ENGINE ABOARD THE SHIP ENABLES THE COSMONAUTS TO PERFORM DIFFERENT MANEUVERS IN ORBIT TO AN ALTITUDE OF 1,300 KM. THE LIQUID FUEL ROCKET ENGINE WAS PLACED IN THE UNPRESSURIZED PART OF THE INSTRUMENT EQUIPMENT MODULE. THIS PART OF THE SHIP ALSO HOLDS FUEL TANKS AND TWO ENGINES, THE MAIN ENGINE AND AN EQUIVALENT STANDBY, EACH WITH A THRUST OF 400 KG. IN ADDITION, THERE IS A MAIN AND STANDBY SYSTEM FOR SUPERCHARGING THE FUEL TANKS. HOW DID ANDRIYAN NIKOLAYEV AND VITALIY SEVAST'YANOV EXECUTE THE FIRST CORRECTION ON THE FIFTH REVOLUTION? ON THE FOURTH REVOLUTION, ORIENTED ON THE SUN WITH THE SOLAR CELLS, THE SHIP, LIKE A GIANT TOP, ROTATED COUNTERCLOCKWISE ABOUT THE SHIP SUN AXIS WITH A SMALL ANGULAR VELOCITY. THEN IT ENTERED THE ZONE OF RADIOVISIBILITY OF THE TRACKING STATIONS OF THE COMMAND MEASURING COMPLEX AND BEGAN THE NEXT COMMUNICATIONS CONTACT. THE COSMONAUT WAS INFORMED OF THE ORIENTATION METHOD AND THE TIME FOR FIRING OF THE ENGINE. THE SCHEDULED COMMUNICATIONS CONTACT WAS COMPLETED. THE SHIP DEPARTS FROM THE SHORES OF ITS HOME COUNTRY, CROSSES THE EQUATOR, AND SOON EASTER ISLAND HAS FLASHED PAST THE WINDOW. SHIP'S ENGINEER VITALIY SEVAST'YANOV CAREFULLY CHECKS THE PRESSURE IN THE ORIENTATION SYSTEM ENGINES AND THE TEMPERATURE AND SUPERCHARGING PRESSURE IN THE FUEL TANKS OF THE FLIGHT ENGINE. AFTER SOME TIME THE "SOYUZ 9" COMMANDER BEGINS THE ORIENTATION.

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0141548

ABSTRACT/EXTRACT--ON THE LEFT PANEL OF THE COMMAND SIGNAL DEVICE HE PRESSES THE "MANUAL CONTROL" KEY AND HIS HAND RESTS ON THE RIGHT CONTROL LEVER. MANUAL ORIENTATION OF THE SHIP ON THE ILLUMINATED SIDE OF THE EARTH IS ACCOMPLISHED USING AN OPTICAL SIGHT RIGIDLY ATTACHED IN ONE OF THE SHIP'S WINDOWS. THE OPTICAL SIGHT IS AN ORIGINAL DEVICE WHICH ENABLES A COSMONAUT WITH APPROPRIATE SHIP ORIENTATION TO SEE SIMULTANEOUSLY THE SURFACE OF THE EARTH AND THE HORIZON, SEE SPACE OBJECTS AND ORIENT THE SHIP ON THE SUN. FIRST THE SHIP MUST BE STABILIZED. ANDRIYAN NIKOLAYEV SMOOTHLY TURNS THE LEVER CLOCKWISE. THE MICROENGINE IS FIRED AND THE SHIP SLOWLY SLOWS DOWN ITS ROTATION AND SOON "FREEZES," AS IF EMBEDDED. THEN LOOKED OUT THE WINDOW. THE EARTH WAS SOMEWHERE BEHIND HIS HEAD. THE COSMONAUTS, STRAPPED IN THEIR SEATS, WERE UPSIDE DOWN. BUT IT WAS NECESSARY TO ORIENT THE SHIP IN SUCH A WAY THAT THE AXIS OF THE OPTICAL SIGHT WOULD BE POINTED AT THE CENTER OF THE EARTH AND THE EARTH'S HORIZON WOULD OCCUPY A POSITION SYMMETRICAL TO THE CENTRAL FIELD OF VIEW. A SMALL DEFLECTION OF THE LEVER TO THE LEFT AND THE SHIP OBEDIENTLY BANKED. NOW A GIANT SEMICIRCLE OF HORIZON FLOATED IN THE OPTICAL SIGHT AND THE CONFIGURATION OF THE COAST OF THE NORTHERN TIP OF SOUTH AMERICA BEGAN TO APPEAR. STILL ANOTHER MOVEMENT OF THE LEVER, ROTATING ABOUT ITS TRANSVERSE AXIS, THE SHIP STICKS UP ITS PROW. A TURN. A NEW TURN IN COURSE. NOW THE SHIP IS PRECISELY ORIENTED IN SPACE: ITS LONGITUDINAL AXIS LIES STRICTLY IN THE ORBITAL PLANE. THE COSMONAUT "HANDS OVER" CONTROL TO GYROSCOPIC INSTRUMENTS. NOW THEY WILL RIGOROUSLY MAINTAIN AN INVARIABLE POSITION OF THE SHIP IN SPACE.

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4/4 037

UNCLASSIFIED

PROCESSING DATE--04DEC79

CIRC ACCESSION NO--AN0141548

ABSTRACT/EXTRACT--THE SHIP IS APPROACHING THE BOUNDARIES OF OUR MOTHERLAND. HERE COMES THE DAWN AND THE EARTH'S FIRST RAYS SLIP ACROSS THE EARTH. THE COSMONAUTS ATTENTIVELY WATCH THE STOPWATCH HAND. THE ENGINE MUST BE FIRED AT ABSOLUTELY THE PRECISE TIME. NOW, AT THE TIME INDICATED FROM THE EARTH, THE COMMANDER STARTS THE STOPWATCH. AFTER THE RIGHT TIME HAS ELAPSED A VALVE CLICKS AND THE LIGHT INDICATING "ENGINE FIRED" LIGHTS UP. THE SHIP TREMBLES SLIGHTLY AND THE COSMONAUTS SENSE A SMALL BUMP. THEY HEAR A DISTANT MONOTONOUS ROAR RESEMBLING THE RUSTLING OF METAL. THE COSMONAUTS ARE SLIGHTLY PRESSED AGAINST THEIR SEATS AND THE FAMILIAR AND ACCUSTOMED STATE OF "WEIGHT" APPEARS, ALTHOUGH EXPRESSED MANY TIMES LESS THAN ON THE EARTH'S SURFACE. THE "SOYUZ 9", LEAVING A TRAIL OF FIRE FAR BEHIND IT, SLOWLY BEGINS TO ENTER A NEW, INVISIBLE ORBIT. ON THE SEVENTEENTH FLIGHT REVOLUTION, WHEN THE "SOYUZ 9" WAS 20 MINUTES OF FLIGHT TO THE EQUATOR, ANOTHER ORBITAL CORRECTION WAS MADE. THE "RED STAR" SHIP ROSE STILL HIGHER ABOVE THE PLANET. NOW ITS ORBIT BECAME CLOSE TO CIRCULAR.

UNCLASSIFIED

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KISHOV, V.G.  
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 1-70

237487 ROTARY FUEL PUMP for multi-cylinder internal combustion engine, comprising body with cam washers and pressure connections, and a rotor having plungers and pushrods in radial apertures, interacting with the discs, differing in the plungers and apertures being in the form of isolated pressure elements displaced circumferentially and along the rotor axis, each being connected to the pressure connections of half the engine cylinders. This provides for injection during even and uneven order of working strokes. In the case of a rotary fuel pump for six-cylinder engines with uneven order of working strokes, in each element of the pump there are three plungers at an angle of 120 deg., and on each cam washer there are three projections also at an angle of 120 deg.

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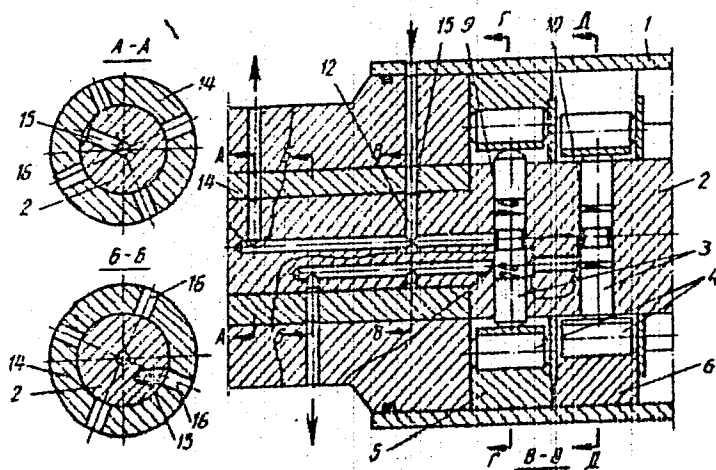
The projections of one washer are displaced circumferentially relative to the projections of the other at the angle required for the order of working strokes. For six-cylinder V engines with an angle between the cylinders of 90 deg., the angle between projections of the adjacent washers would be 45 deg.

7.8.67 as 1177623/24-6. KISLOV V.G. et al. NOGINO FUEL APPARATUS WORKS. (25.6.69) Bul 8/12.2.69. Class 46c. Int.Cl.F 02m.

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19830620

AA0053567

AUTHORS: Kislov, V. G.; Andrusenko, P. I.; Chevtayev, A. V.;  
Mayevskiy, A. G.; Dolganov, K. Ye.; Kovalev, A. I.; Berezovskiy, P. I.;  
Dmitrenko, V. I.; Shukshin, N. P.; Gutarevich, Yu. F.; Koshman, E. I.;  
Otorokin, A. P.; Mos'kin, V. A.; Filippov, V. V.; Dolganov, M. S.;  
Belogradskiy, B. M.; Mokrov, V. I.; Isakov, I. A.; Obvintsev, Ye. S.

Noginskiy Zavod Toplivnoy Apparatury

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USSR

KISLOV, Y. N., Gor'kiy Engineering Construction Institute imeni V. P. Chkalov

"Exercising the Vestibular Apparatus of Gymnasts on a Reduced Support"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 4, 1971, p 72

Abstract: Gymnasts can achieve better balance by exercising on a narrowed bar. Equipment to reduce the width of a standard bar is proposed, consisting of 55-mm and 100-mm width boards that are stacked over the bar and fastened to it with clips. Tests showed that gymnasts who trained with the narrowed bar performed better on the standard bar than did gymnasts who trained with the standard bar. The attachments are easy to build, install, and remove and should be put into commercial production.

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- 73 -

USSR

UDC: 533.951.2/.3

BASHARINOV, A. Ye., ZALOGIN, N. N., KISLOV, V. Ya., LUKINOV, I. N.

"Investigation of Mechanisms of Excitation of Oscillations of Gyroharmonics in a Plasma-Beam Discharge"

V sb. Kolebaniya i volny v plazme (Oscillations and Waves in a Plasma--collection of works), Minsk, "Nauka i tekhn.", 1971, pp 43-46 (from RZh--Mekhanika, No 7, Jul 71, Abstract No 7B186)

Translation: An experimental study is made of oscillations excited in a plasma-beam discharge in a magnetic field on frequencies  $\omega > \omega_c \approx \omega_p$ . It is shown that there is spatial amplification on harmonics of the cyclotron frequency and on the structure of fields in the form of the composition of slow and fast waves. Emission of the fast transverse wave takes place in the region of abrupt change of fields of the fast wave. Authors' abstract.

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USSR

UDC: 51

GOLENKO, D. I., KISLOV, Ye. F.

"Mathematical Model for Sale of Goods With Regard to Demand"

Tr. Mosk. ekon.-stat. in-te (Works of the Moscow Institute of Statistical Economics), 1972, ch. 2, pp 142-150 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4v489)

Translation: The problem reduces to a two-level supply control problem.

1/1

- 27 -



USSR

KISLOV, Ye. F.

"Statement and Algorithm for Solution of a Nonlinear Problem of Transport and Distribution"

Teoriya i Prakt. Mekhanizir. Obrab. Ekon. Inform. [Theory and Practice of Mechanized Processing of Economic Information -- Collection of Works], Moscow, 1971, pp 90-99, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V420).

NO ABSTRACT.

UDC 669.183.5+669.187.26

USSR

KISLOVA, N. A., and BOYARSHINOV, V. A.

"The Question of the Cost of Metal Products Produced by Electric Slag and Vacuum Arc Furnaces"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75, Metallurgiya Press, 1970, pp 189-193

Translation: The increased cost of electric slag and vacuum arc metal in comparison with metal produced by ordinary methods is related to the additional consumption of metal in manufacture of consumable electrodes and their remelting, and expenditures for operation of equipment, as well as the higher capital investments required. Analysis of these expenses based on report and plan calculations of metallurgical plants has established the magnitude of total additional expenses for certain groups of steels and alloys. Means are noted for further reduction of the cost of electric slag remelting and vacuum arc metal: total transition to cast consumable electrodes, casting of square and rectangular ingots in place of circular ingots, casting of ingots with high ratio of height to diameter and high weight, the substitution of shock peening for turning of expendable electrodes, etc. 1 table.

- 65 -

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UDC 778.534.83

USSR

CHERKASOV, Yu. A., Candidate of Sciences, KISLOVSKIY, I. L., ANDRONOV, V. V.,  
LYUBIN, V. M., Candidate of Sciences, AND FEDOROVA, Ye. I.

"Electrophotographic Spectrovisor for the Visible Area of the Spectrum Based  
on Recording Vidicon"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 28-32.

ABSTRACT: Results are presented from a study of the parameters of an electro-  
photographic spectrovisor, based on a recording vidicon. The spectrovisor can  
be used for observation and recording of spectrograms and photomicrograms in  
the visible area in a periodic mode at 25 frames per second and in the time  
integration mode with a resolution of  $25 \text{ mm}^{-1}$  and a sensitivity of up to  
200 state standard units. The method of visualization of spectra is based on  
recording of an optical image by a recording photoconductive layer, so that  
the optical image is converted to the corresponding potential relief with sub-  
sequent visualization.

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UDC 537.324

USSR

OSIPOV, E.V., KISLOVSKIY, YE.N., REVUK, M.YA.

"To The Problem Of The Technology Of Production Of Galvanomagnetic Cooling Elements"

Elektron.tekhnika.Nauch.-tekhn.sb. Kriogen.elektronika (Electronics Technology. Scientific-Technical Collection. Cryogenic Electronics), 1971, Issue 1(3), pp 167-171 (from RZh:Elektronika i yeva primeneniye, No 10, Oct 1972, Abstract No 10B221)

Translation: The structure of the surface layers of single crystals of bismuth after electro-spark processing of the facets was determined by the metallographic method. The small pits [yamka] of etching were used to determine a defective layer. The thickness of the disturbed layer after electro-spark cutting amounted to 120 micron which is smaller than with diamond cutting. 5 ill. 10 ref.N.K.

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KISLOVSKIY, YE N.

SPRS 19208  
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3

XIV-11. STUDY OF THE STRUCTURAL PERFECTION OF THE HETEROPHASED Si-Ce SYSTEM

Article by V. L. Vasil'yevskaya, I. I. Ustrenko, Ye. N. Kislovskiy, I. V. Prokopenko, A. V. Stebnik, Kiev: *Doklady Akad. Nauk Ukrainy*, 1972, No. 1, p. 1031. *Soviet Journal of Applied Chemistry*, 1972, 45(12), p. 2203.

The structural perfection of the heterophased Si-Ce systems obtained by the method of sublimation of Si on the Ce substrate in the temperature range of 600-950° C at a growth rate of 0.1 micron/minute was investigated using the x-ray topographic diffraction and metallographic methods. It was demonstrated that the degree of structural perfection of Si films on Ce is lower than the Ce film on Si. A sharp increase in the halfwidth of the rocking curves of the double-crystal spectrometer obtained from the film and the substrate was detected by comparison with the values characteristic of ideal crystals. The x-ray topography, however, did not reveal clear fragmentary structure characteristic of Ce film grown on Si substrates. The cause of this phenomenon is discussed.

UDC: 681.332.65

USSR

KISLYUK. L. D.

"Device for Reception of Hamming Code"

USSR Authors' Certificate No 246353, Filed 28 March 1968, Published 28 November 1969 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B122P, by L. Sh)

Translation: A device is suggested for the reception of Hamming code, used in radio telemetry and computer technology. The device contains a series-connected digital integrator, accumulator, adder, comparison unit, control unit, syndrome determiner, and a buffer memory unit. One specific feature of the device is that it is equipped with a number unit, a correction commutator series-connected to the number unit, and a half adder, the inputs of which are connected to the buffer memory and correction commutator. A schematic diagram of the device and description of its operation are presented. An algorithm is presented for symbol-by-symbol reception of Hamming code with correction of individual errors. One illustration.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70  
 TITLE--DEPENDENCE OF THE ALPHA PHOSPHORESCENCE SPECTRA FOR ACRIDINE DYES  
 ON ACTIVATOR CONCENTRATION -U-  
 AUTHOR--(03)-PONOCHOVNYI, V.I., LYSENKO, G.M., KISLYAK, G.M.  
 COUNTRY OF INFO--USSR  
 SOURCE--UKR. FIZ. ZH. 1970, 15(1), 158-60  
 DATE PUBLISHED-----70

K

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--PHOSPHORESCENCE, SPECTRUM, ACRIDINE, DYE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1984/1711

STEP NO--UR/0185/70/015/001/0158/0160

CIRC ACCESSION NO--AP0100308

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 018

CIRC ACCESSION NO--AP0100308

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

ABSTRACT. PHOSPHORESCENCE SPECTRA OF  
ACRIDINE YELLOW WAS MEASURED FOR SAMPLES OF EQUAL CONC. BUT OF  
DIFFERENT THICKNESS AND EXCITED AT 90DEGRESS ANGLE AND THROUGHOUT THE  
SAMPLE (KAPPA., ET AL., 1966). THE RESULTS INDICATE THAT THE CHANGES IN  
PHOSPHORESCENCE SPECTRA ARE DUE TO THE CHANGE IN CONC. OF THE ACTIVATOR  
PI SYSTEM OF MOL.

UNCLASSIFIED



Acc. Nr. **A70048356** - Abstracting Service: Ref. Code: **570 UR0141**  
INTERNAT. AEROSPACE ABST.

**A70-25153 #** Observations of Jupiter, Venus and 3C 273 at the wavelengths of 2 and 8 mm (Nabludeniiia Iupitera, Venery i istochnika 3C 273 na volnakh 2 i 8 mm). V. A. Efanov, A. G. Kisilakova, I. G. Moiseev, and A. I. Maumov (Gor'kovskii Gosudarstvennyi Universitet, Gorki, USSR). Radiofizika, vol. 13, no. 12, 1970, p. 219-224. 15 refs. In Russian.

Results of observations carried out in May 1968, using a 22-m radio telescope. The brightness temperature of Venus, found by comparison with that of Jupiter, appeared to be equal to 290 plus or minus 25 K at 2.16 mm and 495 plus or minus 20 K at 8 mm. The densities of the radiation fluxes of the source 3C 273 at the same wavelengths are equal to  $(114 \text{ plus or minus } 14) \times 10$  to the minus 26th W/sq m-H2 and  $(62 \text{ plus or minus } 4) \times 10$  to the minus 26th W/sq m-H2. The data are presented without taking into account the errors in determining the brightness temperatures of Jupiter, the latter accepted to be equal to 150 plus or minus 20 K at 2.16 mm and 144 plus or minus 20 K at 8 mm. (Author)

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REEL/FRAME  
**19800063**

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NUCLEAR SCI. ABST.

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3332 (MATT-Trans-92) NEW RESULTS IN THE STUDY OF ANOMALOUS PLASMA RESISTANCE IN THE TM-3 TOKAMAK. Bobrevskii, G. A.; Kislyakov, A. I.; Petrov, M. P.; Razumova, K. A.; Shcheglov, D. A. Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Moscow, Institut Atomnoi Energii.

Translated for Princeton Univ., N. J., from report IAE-1905. 16p. Dep. CFSTI.

An investigation was made of discharge conditions in the TM-3 device with a relatively high temperature and low concentration. Under these conditions protons are detected the temperature of which cannot be explained by Coulomb transfers from electrons to ions in a number of cases. The dependence of the anomalous resistance on certain parameters is studied. (auth)

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19730501

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--FORMATION CONDITIONS FOR LEAD AND CADMIUM MOLYBDATES -U-  
AUTHOR-(02)-ZOBNINA, A.N., KISLYAKOV, I.P.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 143-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MOLYBDATE, LEAD COMPOUND, CADMIUM COMPOUND, CHEMICAL  
PRODUCTION, DEHYDRATION, CADMIUM CHLORIDE, NITRATE, SOLUTION ACIDITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0843 STEP NO--UR/0153/70/013/002/0143/0147  
CIRC ACCESSION NO--AT0132933  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132933

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY MIXING SOLNS. OF PB(NO SUB3) SUB2 AND CDCL SUB2 WITH A SOLN. OF NA SUB2 MOO SUB4 IN APPROX. EQUIMOLAR AMTS. AT PH 4.2-5.5, NEUTRAL SALTS OF THE COMPN. MMOO SUB4.XH SUB2 O ARE FORMED. THESE SALTS ARE DEHYDRATED AT 105DEGREES AND M. 1070 AND 1180DEGREES. WITH VARYING CONCNS. OF PB OR CD, BASIC MOLYBDATES ARE FORMED AT HIGHER PH VALUES. WITH PB, 9PBMOO SUB4.PB(OH) SUB2.XH SUB2 O IS FORMED AP PH GREATERH THAN 5.6 WITH INSUFFICIENT PB IN SOLN., AND 3PBMOO SUB4.PB(OH) SUB2.XHS UB2 O IS FORMED WITH EXCESS PB. 9PBMOO SUB4.PB(OH) SUB2.XH SUB2 O IS DEHYDRATED AT LESS THAN 105DEGREES, AND DECOMP. AT 332DEGREES. WITH CD, 4CDMOO SUB4.CD(OH) SUB2. X H SUB2 O IS FORMED AT PH GREATER THAN 6. THIS SALT DECOMPS. AT 355DEGREES.  
FACILITY: MOSK. INST. TONKDI KHIM. TEKHNDL. IM. LOMONDOVA, MOSCOW, USSR.

UNCLASSIFIED

In the contemporary stage of technical progress, in all the fields of science and in the technology of mechanization and automation of the production process, the most important is the source of the increase of their productivity. An important publication of the laborious processes in the composition and in the cartographic production among the tasks which require a solution. The second not less important problem is the problem of raising the quality of artistic finishing of maps and atlases.

Perception of a map, the ease of its reading depend first of all on the correct selection of the size, form and color of contained elements, on the harmonic juxtaposition of these elements between one another. The artistic effect of cartographic representation upon its reader depends on the degree of the qualitative execution of the map elements and of their interaction from the point of view of artistic graphics.

Esthetics plays an important part at the perception of a cartographic representation. It is to a certain extent a catalytic of perception process. For this reason together with the technical perfecting of processes connected with the reproduction of cartographic representation, it is necessary to work on perfecting methods of artistic shaping, on the esthetics of cartographic representation.

In the present article questions of unification of the lettering width and of creating new (unified) cartographic photo composed types for the large scale maps in connection with the automation of the process of preparing editorial inscription originals (type originals) are clarified, as well as certain questions of

I. Stronitsva I. The role of esthetic perception in artistic planning. Collected work "Esthetics and Productivity". Izd-vo KGU, 1969.

improving artistic-graphic and printing quality of cartographic types.

At the present time in final shaping of maps the photo composed cartographic types are used, which are presented in a systematic form in an album published in 1956. They played a significant role in improving map formats in our country. These types are included in the formats of such leading cartographic productions as the World Atlas, Marine Atlas, Antarctic Atlas, Physico-Geographical World Atlas, and other atlases and maps.

The types for the maps have much in common with the book types. They are constructed according to the same laws, have the same artistic-graphical printing properties as the book types. However, in view of the fact that the process of manufacturing printing type originals and of their reproduction in maps differ by some peculiarities in comparison to the processes in book printing, a large part of types for the maps should have supplementary specific qualities. This circumstance is relevant to that part of types which is used for labeling of the map content elements. Such types should be well distinguishable from one another according to the outline, saturation, contrast, inclination, and color since the inscriptions on the maps are not only the names of the objects but also conventional designations. Cartographic types should be also easily read on the background of other numerous line and plane background map elements and at the same time they should be of maximum economy in the sense of areas taken up by them.

Some types should secure a good readability of inscriptions in those cases when the line is split or is curved in shape following the bends of the map elements (rivers, lakes, seas, mountain chains and so on). Inscriptions of the map objects may have the most varied length and shape of the line, as well as the orientation, which all depend on the form, size, and the position of labeled objects. Map inscriptions are not subject to the rules of line cut-off since the length of cartographic objects inscriptions is usually not limited by their size.

Some peculiar and complex approaches to the distribution of inscriptions on the maps, the utilization at the same time of a large number of types of various design, outline, and size create definite difficulties at attempts at automation of the original

2. In 1970 in TSNLONIA a work was conducted on the appraisal of cartographic types quality. Proposals were made on creating a new type complex, and it was recommended to include in it the best of the available cartographic types, as well as newly developed number of typographic types.

process in producing inscriptions to be published. This, to a certain degree, was the reason for the delay in creating automatic devices for the preparation of such originals. The problems of hand composing and pasting in names on the original in laborious and unproductive, and for this reason at the present time a problem arose of mechanization and automation of the type original's preparation for publication. In connection with this there arose the necessity of creating such cartographic type devices which would facilitate their better utilization in automated devices. For the accomplishment of this task a method was developed in the TSNIGAIK for the unification of the type lettering width applied at the present time.

For the purpose of a rational and simpler solution of the problem in designing an electronic automatic block of a photo composing device which should secure the sign distribution during (blanks), the following is anticipated in the type construction.

1. The type signs are grouped according to the lettering width, with the number of groups as small as possible. The letter width is the same for each sign in a group.
2. In all the types the same signs are placed in the same groups (the same grouping of signs in all the types).
3. Upper case and lower case signs should be placed in different groups.

In the photo composing machines operating on the mosaic type principle, grouping of type signs is different from the grouping developed by us by the fact that signs are grouped mainly for the purpose of standardizing the width (thickness) of typographic letters in the conditional, the so called grid system of measurements. This system involves a definite order of the matrices distribution in a matrix frame on which in its turn depend the distribution of letters in a composition in relation to the selected interletter spaces and the line cutting off.

The system of distribution of the type signs into groups according to lettering width in a number of other existing photo composition automats are used for the simplification of composing control. The number of groups in some foreign photo composing systems is limited to 9. Several kinds of groupings are used depending on the type outline (cursive, straight and so on).

The system developed in the TSNIGAIK contains 12 groups

3. One set of 1/72 of an inch is equal to 0.3528 mm (mono-type point). A set is a number determining the compactness of the type permitting to compute an absolute thickness of the lettering.

USSR

UDC 532.72

KISLYAKOV, N. I., REBROV, A. K., and SHARAFUTDINOV, R. G. (Novosibirsk)

"Diffusion Processes Within the Mixing Zone of a Low-Density Supersonic Jet"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973,  
pp 121-127

Abstract: In this paper are presented the results of an experimental investigation of diffusion processes in a low-density jet behind a strongly under-expanded sonic nozzle in a zone of mixture with the surrounding gas. The structure of the jet during the expansion of  $N_2$  into an atmosphere of  $CO + N_2$  in regimes of the transition from continuous flow to rarefied flow were studied by means of electron-beam diagnostic equipment. Results of an analysis of the concentration fields of individual components are given in generalized form. In conclusion, the approximate limits of the characteristic regimes are indicated for diatomic gases with properties similar to those of nitrogen. 7 figures, 1 table, 12 references.

1/1



USSR

UDC: 532.522.2

VOLCHKOV, V. V., IVANOV, A. V., KISLYAKOV, N. I., REBROV, A. K.,  
SUKHNEV, V. A., and SHARAFUTDINOV, R. G.

"Low-Density Jets from a Sonic Nozzle at Large Pressure Drops"

Moscow, Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, No 2,  
1973, pp 64-73

Abstract: Experiments are described for the observation of low-density gas dynamic jets using electron-beam analysis and the Pitot tube. A full description of the apparatus and the experimental method is given in earlier papers on which the present article is based (A. K. Rebrov, et al, Vliyaniye razrezhennosti na strukturu svobodnoy strui azota -- Effect of Rarefaction on the Structure of a Free Nitrogen Jet -- PMTF, No 1, 1971, and others). These experiments used sonic nozzles consisting of openings in a thin wall with a ratio of wall thickness to opening diameter of less than 0.05. With a Reynolds number greater than 200 at the nozzle opening, the effect of the boundary layer in the nozzle can be neglected and the flow factor of the nozzle can be taken equal to unity. Nitrogen, air, and carbon dioxide at a drag temperature of 300° K were used as the operating gases. The purpose of the experiments was to study the structure of longitudinal and transverse gas

1/2

USSR

UDC: 532.522.2

VOLCHKOV, V. V., et al, Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, No 2, 1973, pp 64-73

dynamic parameter distributions in the initial part of the jet, and set up a detailed picture of the jet flow for Reynolds numbers reduced to values corresponding to the dispersion modes for which the local mean free path of the molecules is commensurate with the flow dimensions.

2/2

- 143 -

USSR

UDC 537.32:539.37

KISLYAKOV, S. A., Belorussian State University imeni V. I. Lenin

"Influence of Plastic Deformation and Quenching on the Absolute Thermal emf of Nickel"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 77-81

Abstract: Permanent changes take place in the internal energy, thermal emf, and specific electrical resistance of metals and alloys during plastic deformation. The changes in these properties depend on the rate and temperature of the deformation. The existence of a dynamic effect for the specific electrical resistance and thermal emf has been established for certain metals such as copper, aluminum, and iron and for certain alloys such as bronze and brass. Quenching from high temperatures leads to significant changes in the absolute thermal emf of metals. The author studies the influence of the degree and rate of plastic deformation of nickel on the change in its absolute thermal emf. He established the dynamic effect of change in the thermal emf, the dynamic coefficient of which is 1.22-1.25. He finds that the plastic deformation of quenched nickel lowers its absolute thermal emf, and on this basis he makes conclusions as to the contribution of vacancies and dislocations that differ in sign to the change in the absolute thermal emf of nickel. He  
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USSR

KISLYAKOV, S. A., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6,  
1971, pp 77-81

studies the kinetics of recovering the thermal emf of the nickel induced by plastic deformation and establishes the existence of two stages of recovery that differ in their nature and have different activation energies of 0.1 and 0.3 eV. The article contains 4 illustrations and 10 bibliographic entries.

2/2

- 110 -

USSR

UDC 612.886

KISLYAKOV, V. A., and LEVASHOV, M. M., Laboratory of the Physiology of the Vestibular Apparatus, Institute of Physiology imeni I. P. Pavlov, USSR Academy of Sciences, Leningrad

"Characteristics of the Vestibular-Optokinetic Nystagmus"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 3, Mar 71, pp 380-392

Abstract: The close interdependence between the vestibular and visual systems is most clearly manifested by nystagmus, which is related to both systems. A quantitative comparison was made of nystagmus reactions arising from stimulation of the vestibular apparatus by angular acceleration in the dark and in the light. In the first case only the vestibular apparatus served as a source of afferentation, in the second case, there was afferentation caused by the optic tract as well. Rabbits were used in the experiments. The results obtained showed that optokinetic nystagmus is produced by optokinetic and vestibular excitation; its activity is increased by prolonged vestibular afferentation. The result of combined stimulation is a vestibular nystagmus. The course of the vestibular reaction is sufficiently strong under the effect of an isolated vestibular stimulus and reduced when combined with optokinetic stimulation. The combined stimulation was found to produce a qualitatively  
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USSR

KISLYAKOV, V. A., and LEVASHOV, M. M., *Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova*, Vol 57, No 3, Mar 71, pp 380-392

new reaction of the vestibular-optokinetic type. It differs from either the purely vestibular or the purely optokinetic reflexes but it has several characteristics pertaining to either type of isolated reflex. In particular, this new type of nystagmus must be regarded more as a response to the tracking of moving stimuli than as a response to stimulation of either the vestibular or optokinetic system alone.

2/2

- 68 -

USSR

UDC 612.886

KISLYAKOV, V. A., and ORLOV, I. V., Institute of Physiology imeni I. P. Pavlov, USSR Academy of Sciences, Leningrad

"Hydrodynamic Effects Among the Various Parts of the Vestibular Apparatus"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 2, 1971, pp 479-482

Abstract: In an investigation of labyrinth function in the frog, the semi-circular canals and the utricle were stimulated by spot application of heat, and action potentials were recorded from individual nerve fibers of the vestibular nerve. Thermal stimulation of the lateral semicircular canal resulted in a greater number of action potentials conducted by nerve fibers originating in the lateral canal and fibers originating in the anterior canal. However, heat applied to the utricle resulted in excitation of anterior canal fibers but inhibition of lateral canal fibers. It was postulated that thermal stimulation of the lateral canal produces convection currents in the endolymph, which are utriculopetal in the lateral canal but utriculofugal in the anterior canal. Thermal stimulation of the utricle, on the other hand, induces convection currents which bend the cupulas in both canals away from the utricle.

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USSR

UDC 612.886

KISLYAKOV, V. A., LEVASHOV, M. M., ORLOV, I. V., and SEMENOV, L. A.,  
Laboratory of Physiology of the Vestibular Apparatus, Institute of  
Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Interaction of the Semicircular Canals and Otoliths"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 41,  
No 12, 1970, pp 1,731-1,744

Abstract: Experiments were performed on pigeons to study the mechanism of action of the otoliths on rotatory, galvanic, and caloric nystagmus. Centrifugal force (CF) was used to stimulate the otoliths. CF was found to exert a modifying influence on reflexes from the semicircular canals. The inhibitory or excitatory effect of centrifugal force depended on the absolute intensity of the CF and on changes in the force with time. Two different mechanisms appear to be involved: (1) in a caloric test, the direct effect of the CF on the hydrodynamics of the semicircular canals, i.e., that portion of the labyrinth associated with the origin of nystagmus; and (2) stimulation of the otolith apparatus and the indirect influence of otolithic afferentation through the central nervous system on reflexes from  
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USSR

LISLYAKOV, V. A., et al, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 41, No 12, 1970, pp 1,731-1,744

the semicircular canals. While the central mechanisms are mostly involved in altering the characteristics of the rotatory and galvanic varieties of nystagmus, the hydrodynamic processes in the labyrinth are dominant in modifying caloric nystagmus.

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USSR

MOSKALENKO, Yu. Ye., IVANOVA, T. I., VAYNSHTEYN, G. B., ZELIKSON, B. B.,  
KISLYAKOV, Yu. Ya., and KAS'YAN, I. I.

"Resistance of the Cerebrovascular System to Transverse Accelerations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya No 1, 1973,  
pp 37-46

Abstract: Histological examination of brain sections from dogs subjected to transverse accelerations of 15 g or more for 30 to 40 seconds revealed pronounced morphological changes in the blood vessels, including rupture of the walls with extensive hemorrhages into the brain tissue and ventricles. Intracranial cerebrospinal fluid pressure increased to 15 to 20 g and then stabilized while blood pressure continued to grow in proportion to the intensity of acceleration. Study of a mathematical model of the process showed that after acceleration of up to 15 g, transmural pressure in the cerebral vessels does not change significantly. However, acceleration of over 15 g increases transmural pressure beyond the tensile strength of the vascular walls and may cause them to rupture. Thus, the resistance of the cerebrovascular system to transverse accelerations is dependent on the relationship between the strength of the structural components of the vascular wall and the increase in transmural pressure.

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1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ON THE MECHANISMS CONCERNED WITH ORIGIN OF CSF PRESSURE PULSE WAVES  
-U-  
AUTHOR--(03)-MOSKALENKO, YU.YE., KISLYAKOV, YU.YA., VAYNSHTEYN, G.B.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,  
NR 3, PP 384-391  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BRAIN, BLOOD CIRCULATION, ARTERY, BLOOD VESSEL, BLOOD  
PRESSURE, MATHEMATIC ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/0372 STEP NO--UR/0239/70/056/003/0384/0391  
CIRC ACCESSION NO--AP0132601  
UNCLASSIFIED

2/2 024  
CIRC ACCESSION NO--AP0132601  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. TO ELUCIDATE THE QUESTION OF ORIGIN OF THE INTRACRANIAL CSF PRESSURE PULSE WAVES THE METHOD OF MATHEMATICAL SIMULATION OF THE CEREBRAL CIRCULATION WAS USED: THE PULSE WAVES OF SYSTEMIC ARTERIAL AND VENOUS PRESSURE, THE ELASTICITY OF CRANIO SPINAL CAVITY AND CEREBRAL VESSELS WERE CONSIDERED AS WELL AS THE CEREBRO VASCULAR RESISTANCE. THE MATHEMATICAL ANALYSIS OF PHASE AND AMPLITUDE CORRELATIONS BETWEEN ALL THE REGISTERED PULSE WAVES SHOWED THAT UNDER NORMAL CONDITIONS THE CSF PRESSURE PULSE WAVES WERE MAINLY FORMED BY ARTERIAL PULSATIIONS, WHILE WITH INCREASED RIGHT ARTERIAL PRESSURE THE VENOUS PULSATIIONS BECAME PREDOMINANT FACTOR.  
FACILITY: I. M. SECHENOV'S INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY ACAD. SCI. USSR, LENINGRAD.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THE DYNAMICS OF BONE CONDUCTION IN HEARING IMPROVEMENT OPERATIONS  
ON THYSTAPES --U-  
AUTHOR--KISLYAKOVA, N.A. *K*  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OTORINOLARINGOLOGII, 1970, NR 3, PP 38-43  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--OTOLARYNGOLOGY, AUDITORY SYSTEM, BONE, SURGERY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/1351 STEP NO--UR/0607/70/000/003/0038/0043  
CIRC ACCESSION NO--AP0107824  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0107824

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF BONE CONDUCTION WAS STUDIED IN 120 PATIENTS SUFFERING FROM OTOSCLEROSIS DURING STAPEDOPLASTY. THE RESULTS WERE EVALUATED WITH THE AID OF STATISTICAL METHODS. THE AUTHOR DETERMINED THE VALUE OF THRESHOLD CHANGES OF BONE CONDUCTION OF THE FREQUENCY RANGES, 125, 250, 500, 1000, 2000, 4000 AND 8000 CYCLES PER SECOND, AND CALCULATED THE MEAN ARITHMETIC VALUES OF BONE CONDUCTION THRESHOLD CHANGES ON THREE MAIN SPEECH FREQUENCIES OF 500, 1000 AND 2000 CYCLES PER SECOND. THE GAUSS CURVE OF BONE CONDUCTION CHANGES ON THREE MAIN SPEECH FREQUENCIES IS GIVEN. CHANGES OF POSTOPERATIVE BONE CONDUCTION THRESHOLDS ARE STATISTICALLY INSIGNIFICANT ON THE AVERAGE OF  $M$  EQUALS 4 DB PLUS OR MINUS 1.5 DB, HOWEVER, THE MEAN QUADRATIC VALUE  $\sigma$  EQUALS 10 DB PLUS OR MINUS 1.2 DB, IN INDIVIDUAL CASES THIS POINTS TO ESSENTIAL ALTERATIONS OF THE POSTOPERATIVE BONE CONDUCTION THRESHOLDS IN THE SPEECH FREQUENCY RANGE UP TO 30 DB. THE POSTOPERATIVE DYNAMICS OF BONE CONDUCTION WAS ALSO DETERMINED IN PATIENTS WITH OTOSCLEROSIS IN DIFFERENT AGE GROUPS. CARHART'S WAVE, CHARACTERISTIC OF ANKLOSIS OF THE STAPES, SHOULD BE VIEWED WITH DUE CONSIDERATION OF AGE SPECIFIC CHANGES OF HEARING THRESHOLDS. FACILITY: KLINIKI BOLEZNEY UKHA, NOSA I GORLA TSENTRALNOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC 541.49 + 661.718.1 + 546.711

SETKINA, V. N., GINZBURG, A. G., KISLYAKOVA, N. V., and KURSANOV, D. N.  
Institute of Element-Organic Compounds, Academy of Sciences of the USSR

"Quantitative Evaluation of the Effect of Triphenylphosphine and Triphenyl Phosphite Ligands in  $\pi$ -Cyclopentadienyldicarbonylphosphinic Complexes of Manganese"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 71, pp 434-435

Abstract: Tertiary phosphines and phosphites are stronger donors than the carbonyl groups in transition metal complexes. When one of the carbonyl groups of cyclopentadienylmanganesetricarbonyl (CPMT) was replaced with  $PPh_3$  or  $P(OPh)_3$ , the rate of acid hydrogen exchange was increased 2000- and 70-fold, respectively. Such an exchange leads to a higher electron density, increased rate of electrophilic reactions in the cyclopentadienyl rings  $\pi$ -bonded to the transition metal. Hammett's equation holds for the acid hydrogen exchange of CPMT.

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- 66 -

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PROCESSING DATE--23OCT70

TITLE--ORIENTING ACTION OF THE SULFO GROUP ON A CYCLOPENTADIENYLMANGANESE TRICARBONYL SYSTEM IN THE PROTOPHILIC ISOTOPIC EXCHANGE OF HYDROGEN -U-  
AUTHOR--(05)-SETKINA, V.N., KISLYAKOVA, N.V., PETROVSKIY, P.V., KOLOBOVA, N.YE., KURSANDV, D.N.  
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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. D-H EXCHANGE WAS RUN WITH ETDD  
CONTG. A CATALYTIC AMT. OF ETCNA, AND CYCLOPENTADIENYLMANGANESE  
TRICARBONYL AS THE NA SULFONATE IN THE ALPHA AND BETA POSITIONS. THE  
PROTOPHILIC ISOTOPE EXCHANGE REACTION HAD F VALUES (PARTIAL REACTION  
RATES) OF 4.8 AND 1.8, RESP., FOR THE 2 ISOMERS. FACILITY:  
INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

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USSR

UDC: 621.372.852.1

KISLYAKOVSKIY, A. V., KUSHCH, S. N., and KABAKOV, L. T.

"Selective Waveguide Modulator"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1179-1182

Abstract: A waveguide modulator using a ferrite resonator and having high selectivity is proposed. It permits modulation with frequencies up to several megahertz. Its basic structure is that of a tunable waveguide filter in which the input and output waveguides intersect at right angles such that their broad walls are parallel, with the waveguides interconnected by a circular limiting waveguide and the ferrite resonator. Further details of its structure and of special precautions taken in its design are given. The transmission coefficient of the modulator as a function of the detuning and the amplitude of the modulating magnetic field is determined, and the Fourier series coefficients proportional to the amplitudes of the individual harmonics at the modulator output are found. Suggestions are made for reducing the losses and dimensions of the modulator as well as increasing its selectivity.

1/1

KISLYAKOVSKIY, A.V.

Radio-Engineering

GENERAL PURPOSE MODULAR WAVEGUIDE ASSEMBLY

Article by A. V. Kislyakovskiy, S. G. Kodonovskiy, and S. G. Kiselevskiy, Moscow, Institute of Radio Engineering, Moscow, Vol. 14, No. 10, 1971, pp. 1150-1159

UDC 621.372.552.1

JPRS 57102  
26 September 1972

The design of a general purpose modular waveguide assembly consisting of orthogonally intersecting transmission lines coupled by two ferrite resonators is described. The concept allows one design version to serve as a directional function filter, filter limiter, rejector filter, filter amplifier, and selective attenuator. The engineering specifications for these functional elements are given.

The various filters, circulators, and other devices employed in the frequency separation of signals transmitted in a common waveguide channel are considered in the waveguide version, while their dimensions grow as the wavelength increases.

The sizes of these waveguide assemblies can be appreciably reduced with the use of ferrite resonators. The general purpose modular waveguide assembly (VPRM) described below utilizes the transmission line coupling phenomenon by means of ferrite resonators.

The general purpose modular assembly, shown schematically in Figure 1, consists of a main transmission line 1 and auxiliary transmission lines 2 which are crosswise coupled through the high walls of two longitudinal circular waveguides 3 and 4. The beyond-cutoff waveguides are coupled with the orthogonally intersecting transmission lines through coupling apertures in regions where the high frequency magnetic field is circularly polarized for both transmission lines.

Ferrite resonators 5 and 6, mounted in teflon enclosures 7 and 8, are situated along the axis of the beyond-cutoff waveguides and magnetized by an external field  $H_0$  proportional to the ferromagnetic resonant frequency.

USSR

UDC 621.372.852.1

KISLYKOVSKIY, A.V., VODOP'YANOV, N.G., KUSHCH, S.M.

"Waveguide Universal Functional Unit"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol XIV, No 10, 1971, pp 1130-1136

Abstract: The construction is described of a waveguide universal functional unit consisting of transmission lines intersecting at a right angle, connected by two ferrite resonators, which in one constructive execution make it possible to assure operation of the following functional elements: directional band-pass filter, filter-limiter, rejection filter, filter-circulator, and a selective attenuator. The scheme of the waveguide universal functional unit is shown as well as the electrical circuit of the magnetic system, and a detailed description is given of the technical characteristics of the functional units. Received by editors 15 June 70. 4 ref. 6 fig.

1/1

- 115 -

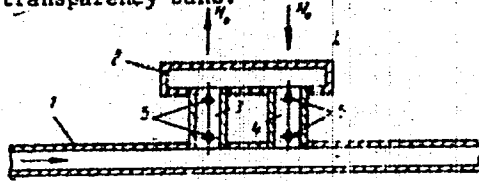
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Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

242253 DIRECTIONAL FILTER FOR WAVEGUIDE containing main transmission line and a cross line attached by means of two circular waveguides with pairs of spherical ferrite elements mounted inside. External field polarises the pairs in opposite direction. The construction separates effectively the "in" and "out" channels outside the transparency band.



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9/12

USSR

UDC: 536.45

KISLYKH, V. V., SIDEL'NIKOV, A. Ye., Moscow

"Certain Problems in the Use of Nitrous Oxide in Adiabatic Compression Units for Producing High-Temperature Gases"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 853-859

Abstract: Experimental and theoretical research is done on the process of compression of  $N_2O + N_2$  mixtures of various compositions at pressures up to about 3000 atmospheres and temperatures up to about 3000°K in adiabatic compression units. Data are obtained which characterize the process of thermal dissociation of  $N_2O$  at high densities. The feasibility of using  $N_2O + N_2$  mixtures as the working gas is discussed as it pertains to the production of high-temperature high-density diatomic gases. The experimental results show that the proposed method is applicable to calculation of the parameters of chemically reacting gases at high temperatures and densities, confirm the results of determination of reaction rate constants of nitrous oxide dissociation in adiabatic compression units, and also show that nitrous oxide can be used as the working gas.

1/1

- 58 -

EQUIPMENT  
Aeronautical

USSR

UDC: 629.7.018.1

KISLYKH, V. V., SIDEL'NIKOV, A. Ye., SMIRNOV, A. I.

"A Method of Creating a Hypersonic Flow"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,  
No 7, Mar 72, Author's Certificate No 329432, Division G, filed 25 May 70,  
published 9 Feb 72, p 167

Translation: This Author's Certificate introduces a method of creating a hypersonic flow in a pulse installation such as an adiabatic compression installation. The method consists in using the internal energy of dense gases fed to the main chamber as a result of piston compression, and the thermal energy released during an isothermal reaction in a working gas of the  $N_2O$  or  $N_2O+N_2$  type. As a distinguishing feature of the patent, the time of conducting an experiment is extended and the effect of high-temperature aggressive products on the walls of the reaction chamber is eliminated by supplying energy to the main chamber to produce a pressure of 3 000-5 000 gauge atmospheres and a temperature higher than the inversion temperature of the working gas (700-900°K) but 50-100°C below the initiation temperature for an isothermal reaction (1200°K), after which the gas is throttled down

1/2



USSR

KISLYKH, V. V. et al., USSR Author's Certificate No 329432

in an auxiliary low-pressure chamber at a choke factor of 6-10 resulting in combustion of the working gas in this chamber. The reaction products with a temperature of 2 500-3 000°K are then fed through a nozzle into the working section of the installation.

2/2

- 101 -

USSR

UDC 621.791.75.93.004.13:620.18:669.15-194

YELAGIN, V. M., Engineer, KISLYUK, F. I., Doctor of Technical Sciences

"Effect of Individual Parameters of the Argon-Arc Welding Process on the Mechanical Properties of 000Kh18N12VI Steel Joints"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 4-7

Abstract: A study was previously made [L. Ye. Alekin, et al., Vliyaniye rezhima avtomaticheskoy svarki alyuminiya na razmery shva, No 1, 1964; M. A. Kudryavtsev, et al., Vliyaniye rezhima argonodugovov svarki austenitnoy stali na razmery shva, No 11, 1969] of the effect of the welding process parameters on the geometric dimensions of the welds, and a procedure was proposed for calculating the admissible deviations of the process parameters with respect to the deviations of the geometric dimensions of the weld. However, the geometric dimensions of the weld cannot serve as the only quality criterion for welding. A study has now been made of the static strength of specimens taken from the weld as the criterion for selecting the welding conditions. The distribution of the ultimate strength of the welds in the case of argon arc welding is subject to a normal law. When selecting the optimal value of the energy parameters of the welding conditions the variation coefficient of the investigated properties  $K_v$  can be used. The optimal mechanical properties (ultimate strength and elongation per unit length) under static loads are obtained for welding conditions corresponding 1/2

USSR

YELAGIN, V. M., et al., Svarochnoye proizvodstvo, No 9, 1972, pp 4-7

to its minimum value. The admissible deviations of the energy parameters of the welding conditions from the optimal values can be defined by the Fischer criterion. The arc voltage is the most important parameter of the welding process, and deviations of the arc voltage from the fixed values have the greatest effect on the properties of the weld.

Tungsten electrode argon arc welding on the ZD10 machine with a certified precision of 0.5% was used for the experimental tests. Graphs are presented for the probability density curves of the normal distribution of the ultimate strength of welded joints of 000Kh18N12VI steel 1 mm thick, 1Kh18N9T steel 1.35 mm thick and Kh18N10T steel 2 mm thick, the effect of the welding current on the mechanical properties of 000Kh18N12VI steel joints 1 mm and 1.5 mm thick, the effect of the welding speed on the mechanical properties of joints 1 mm thick with a welding current of 56 amps and an arc voltage of 9 volts and 1.5 mm thick with  $I = 80$  amps and  $U = 9$  volts, the effect of the arc voltage on the mechanical properties of joints 1 mm thick with  $I = 56$  amps and a welding speed  $v_{\text{weld}} = 0.67$  cm/sec and 1.5 mm thick with  $I = 80$  amps and  $v_{\text{weld}} = 0.67$  cm/sec, and the effect of the linear energy on the ultimate strength of the joints on varying the welding current and welding speed.

2/2