

USSR

UDC: 621.372.85

DUBROVIN, V. F., MIROVITSKIY, D. I., OSIPVO, L. S.

"Directional Dividers Based on Metal-Dielectric Waveguides"

V sb. Antenny (Antennas--collection of works), Vyp. 9, Moscow, "Svyaz", 1970, pp 72-80 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 123221)

Translation: The authors give the results of development of directed RF power dividers based on metal-dielectric waveguides in which new principles are used for ensuring high directivity. This made it possible to create structurally simple dividers providing high electrical characteristics over a wide frequency band. Making the dividers under laboratory conditions does not require the use of any special technology, and they can be made by printed-circuit techniques in mass production. Basic electrical and structural characteristics are given for a two-channel directional power divider in the centimeter wavelength range. Methods are indicated for further improving the characteristics of dividers of this type. Six illustrations, one table, bibliography of nine titles. Resumé.

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Acc. Nr.: AP00404CS

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Ref. Code: UR 0109

JPRS 52248

UDC 621.317.34-621.317.74

USSR

MIROVITSKIY, D. I., TORGOVANOV, V. A. and CHERKUNOVA, G. P.

"Optical Modelling of Microwave Reflection and Scattering"

Moscow, AN SSSR, Radiotekhnika i Elektronika, Vol 15, No 1, 1970,  
pp 38-50

Abstract: This article describes in detail an experimental study of optical modelling methods of reflection and scattering of radio microwaves. The characteristics of the method and the calibration techniques for measuring instruments are outlined. The apparatus and techniques for measuring radar diagrams of planar and volume diffusers using the helium-neon and argon optical quantum generators are described. A vibration-proof stand and procedures for a photometric processing of measuring data, which are described here, made it possible to study the reflection and scattering cartographic diagrams of planar and volume diffusers with scale and nonscale modelling, and to obtain the averaged diffusion diagrams, which

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are in good agreement with theoretical data. The round, triangular and square metallic polished plates were used as planar diffusors, while the metallic cylinders, spheres and cones, as well as their combinations presented in a photo, were used as volume diffusors. The experimental data in the form of diffusion diagrams are presented and discussed. Orig. art. has 9 figures.

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UDC 621.317.34-621.317.74

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MIROVITSKIY, D. I., TORGOVANOV, V. A. and CHERKUNOVA, G. P.

"Optical Modelling of Microwave Reflection and Scattering"

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Abstract: This article describes in detail an experimental study of optical modelling methods of reflection and scattering of radio microwaves. The characteristics of the method and the calibration techniques for measuring instruments are outlined. The apparatus and techniques for measuring radar diagrams of planar and volume diffusers using the helium-neon and argon optical quantum generators are described. A vibration-proof stand and procedures for a photometric processing of measuring data, which are described here, made it possible to study the reflection and scattering cartographic diagrams of planar and volume diffusers with scale and nonscale modelling, and to obtain the averaged diffusion diagrams, which are in good agreement with theoretical data. The round, triangular and square metallic polished plates were used as planar diffusers, while the metallic cylinders, spheres and cones, as well as their combinations presented in a photo, were used as volume diffusers. The experimental data in the form of diffusion diagrams are presented and discussed. Orig. art. has 9 figures.

USSR

UDC 621.391.2

MIROVITSKIY, D.I., SAMSONOV, G.A., SHANIN, V.I.

"Interference-Shadow Marking Of Volume Models"

Radiotekhnika i elektronika, Vol XVII, No 6, June 1972, pp 1280-1285

Abstract: The effectiveness is shown of a new method of marking in the problem of identification of volume models or groups of models in coherent light. The marking signals substantially increase the informativeness of their images, decreasing the probability of reductions by the introduction of additional criteria [priznak], which assure a sharper appearance of the boundaries of the multi-dimensional regions of the distinguishable specimens. Experimental results are obtained with respect to the identification of volume models during their observation in near and far zones by methods of optical matched filtration. 6 fig. 16 ref. Received by editors, 6 May 1971.

1/1

- 121 -

USSR

UDC 612.015.348:547.965].014.426.014.45

VIBE, K. G., MIROYEDOVA, E. P., KULACHENKO, S. P., and FAYTEL'BERG-BLANK, V. R.,  
Chair of Animal Physiology, Tselionograd Agricultural Institute, and Chair of  
Pathophysiology, Tselinograd Medical Institute

"Changes in the Amino Acid Content in Internal Organs of Rabbits Exposed to  
High-Frequency Electromagnetic and Ultrasound Oscillations"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp  
47-48

Abstract: Experiments on rabbits showed that high-frequency electromagnetic  
fields and ultrasound, like other physical agents, change physiological  
processes according to dose rate and duration of exposure. For example expo-  
sure to a SHF field (centimeter waves) of 30 or 50 w for 10 min did not signif-  
icantly alter the free amino acid content of the liver, stomach, small in-  
testine, lungs, spleen, and kidneys. After exposure to SHF field (centimeter  
waves) of 75 w for the same length of time, however, the amino acid content  
of the stomach increased, while that of the intestine, spleen, and kidneys  
decreased. Ultrasound at 3 w/cm<sup>2</sup> for 5 min produced the greatest changes in  
the organs studied. A weaker dose (0.3 w/cm<sup>2</sup>) had much less effect, even  
when continued for a much longer period of time.

1/1

USSR

UDC 633.51:631.524.86

MIRPULATOVA, N. S., KAMILOVA, M. Kh., RYSBAYEVA, A. S., NAGORNAYA, N. M.,  
and TESHABEYeva, R., Scientific Research Institute of Plant Protection,  
All Union Academy of Agricultural Sciences imeni V. I. Lenin

"Maintaining Resistance to Verticillium Wilt in Cotton Strains"

Moscow, Seleksiya i Semenovodstvo, No 5, Sep/Oct 71, pp 12-15

Abstract: Verticillium dahliae grows readily in the soil of Uzbekistan and destroys large amounts of cotton. To bring the situation under control, wilt-resistant cotton strains should be grown on threatened fields. On cotton farms, the sowing of cotton should alternate with the sowing of alfalfa, which is resistant to this fungus and inhibits its growth. After harvest, the fields should be cleared of all residual weeds to prevent proliferation of the fungus. All instructions on fertilization should be strictly observed to harvest healthier, more resistant seeds. Similarly, sprays should be applied at the right time (which varies for the various strains of cotton). Before seeds are collected, all wilted plants should be removed from the field. To prevent infection during transport, all  
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USSR

MIRPULATOVA, N. S., et al., Seleksiya i Semenovodstvo, No 5, Sep/Oct 71,  
pp 12-15

seeds must be pretreated prior to shipment. All waste material must be  
burned, and the highest sanitary standards should be enforced on cotton  
farms.

2/2

- 22 -



USSR

UDC 612.275.11+616-001.12

MIRRAKHIMOV, M. M., Chair of Faculty Therapy, Medical Institute Kirgiz SSR,  
Frunze

"Human High-Altitude Pathology in Kirgiz SSR"

Moscow, Klinicheskaya Meditsina, Vol 50, No 12, 1972, pp 104-109

Abstract: This review of domestic and foreign literature and the author's original data focuses on high-altitude diseases experienced by individuals normally residing at low altitude who ascend to high altitudes (above 2 km) and by high-altitude residents. The symptoms of altitude sickness, chronic altitude sickness, and the high-altitude acute pulmonary edema syndrome, all of which have hypoxia as the principal pathogenic factor, are described for low-altitude residents and for high-altitude residents who had returned home after visits to low elevations. The threshold above which some high-altitude inhabitants develop hypertrophy of the right ventricle has been found to be 2-2.5 km. Ischemia, myocardial infarction, and other coronary pathology occurs less frequently among high-altitude inhabitants than the average for the country as a whole. On the other hand coronary pathology is characteristic of lowland visitors to high altitudes. One method for preventing such pathology is gradual adaptation. Effects of high altitude on various diseases vary,  
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USSR

MIRRAKHIMOV, M. M., Klinicheskaya Meditsina, Vol 50, No 12, 1972, pp 104-109

being negative for cardiac ischemia, decompensated heart failure, chronic pulmonary heart, and brain concussion, and favorable for anemia, bronchial asthma, chronic bronchitis, initial stages of hypertonic illness, Basedow's disease, schizophrenia, and manic-depressive psychosis. It is also noted that high-altitude adaptation can be used to increase body resistance and treat some diseases, and to arrest premature aging.

2/2

MIRAKHIMOV, M.

Scientific / MEDICAL  
Activities

30 Dec 71

5

POSTSOVIET SCIENCE

USSR

SIZANOV, Ye., *Moskva* Gazeta, 20 Aug 71, p 3

hedge nettle, SOX, calcitonic productivity element, and the antitumorant IX.

Moist, a new product widely used in children's orthopedics in and outside the republic is one of the more important advances in children's nutrition.

Most of Kirgizia consists of high mountains. High mountain physiology and pathology are therefore some of the main study fields pursued by scientific institutes and some chairs at the medical institute. The following organizations are participating in the study of these problems: the Institute of Physiology of the Soviet Academy of Sciences, the Kirgiz Academy of Sciences, the Institute of Physiology and Pathology of the Kirgiz Academy of Sciences, the Institute of Physiology and Pathology of the Kirgiz Academy of Sciences, the Institute of Physiology and Pathology of the Kirgiz Academy of Sciences, and others.

At the Kirgiz Medical Institute, problems of high mountain physiology are studied within the framework of the Interinstitutional Biological Program.

Information has now been accumulated on the functioning of the circulatory and respiratory systems of individuals who are permanent inhabitants of areas with elevations from 750 to 4,200 meters above sea level. Physiological reactions during 2/7

USSR

SIZANOV, Ye., *Moskva* Gazeta, 20 Aug 71, p 3

show-stops stays in high mountain areas are also being studied.

Research has recently begun and is continuing on the use of adaptation to high mountain areas for the reproductive-physiologic process. Studies are being made of the course and treatment of epidemic diseases in high mountain areas and in diseases caused by zoonotic animals.

The number of publications is a special indication of intensive scientific activity. In the past five years over 400 scientific articles have been published in Kirgizia. Many of them are devoted to the study of high mountain areas. On the classification of diseases and therapy on such and similar areas, the investigation of their pathogenesis has been awarded a prize by the Kirgiz Council of Ministers. Other publications include "The Cardiovascular System in High Mountain Areas" by M. Mirakhimov, "Pathology and Physiology of the Organism's Resistance" by M. Mirakhimov and M. S. S. by a group of authors.

During 1971-1975 scientific research institutes and the Central Scientific Research and Production Laboratories of the Medical Institute plan to work on 32 subjects 4/7

Doc 71

6

VIETSOVIET SCIENCE

USSR

STROYKO, Ye., *Meditsinskaya Gazeta*, 20 Aug 71, p 3

Involving one problem of national concern, nine problems in the USSR Ministry of Health plan, and 6 subjects in the Kirgiz SSR economic plan.

The directives of the 5th Five-Year Plan state that improvement of environmental health conditions is a major problem. Therefore, one of the first areas of scientific study in the Kirgiz Five-Year Plan will be to determine possible carcinogenic effects of various chemicals used in the food industry, agriculture, and some sectors of the national economy, and to develop methods for the treatment of malignant tumors. Steps will also be taken to prevent occupational diseases among workers at chemical plants.

Work conditions at sheep shearing plants, enterprises for the initial processing of wool, and tanning and tanning combines in Fuzhou are a main focus of researchers' attention.

Extensive industrial growth, and the development of new regions in our nation are planned during the Ninth Five-Year Plan. In particular, mountain regions will be widely developed. The second wave of population research, therefore, will include determination of optimal high mountain regions with regard to human activity, and determination of the therapeutic-prophylactic effects of high mountain adaptation for a 5/7

USSR

STROYKO, Ye., *Meditsinskaya Gazeta*, 20 Aug 71, p 3

number of cardiovascular and blood diseases. The Kirgiz Medical Institute and a number of national and republican scientific research institutes will participate in an integrated approach to the problems of high mountain physiology and pathology.

It is also planned to continue research on distribution patterns of *Brucella abortus* in Kirgizia and to determine the possibilities of using them for treatment purposes. Studies will be made of adaptation mechanisms in the republic's major and high altitude mountain areas, and scientifically-based methods will be developed for treatment of hypertension, arteriosclerosis, chronic nonspecific polyarthritis, rheumatism, and chronic gonococcal diseases, with consideration given to specific conditions at spas.

During 1971-1975 it is planned to increase the efficiency of immunization against tuberculosis, develop methods of determining the resistance of tuberculosis bacilli to antibiotics, determine the types and non-typical forms of bacilli, and improve the methods of functional and clinical diagnosis of this disease.

Scientific research and medical institutes are preparing to perform these tasks, but their attention is being given to the systematization of this work. This problem is now on the agenda of the day.  
6/7

USSR

UDC 612.82+612.74+612.275.1

MIRBAKHTMOV, M. M., AYDARALIYEV, A. A., and NEPOMNYASHCHAYA, Kirgiz State  
Medical Institute, Frunze

"State of the Brain and Muscles During Gradual Acclimatization to High Altitudes"

Leningrad, Fiziologicheskij Zhurnal SSSR, no 12, 1971, pp 1,840-1,843

Abstract: The dynamics of oxygen tension, blood flow, oxidation-reduction potential, brain and gastrocnemius temperature during gradual adaptation of rats to an altitude of 3,200 m were studied in the Tyan Shan mountains. All the physiological parameters changed significantly by day 7 when the oxidation-reduction potential, blood flow, and temperature reached a peak in the brain, after which they returned to normal by day 45, except  $PO_2$  which did not attain the original level. Meanwhile all the parameters decreased in the gastrocnemius, reaching the low point on day 7 and then returning to normal by day 45. The functional changes occurred more slowly with abrupt adaptation and normalcy was not reached until day 60. Keeping the animals for a while at the intermediate altitude of 2,200 m promoted earlier stabilization of the physiological functions.

1/1

Physiology

USSR

UDC 577.15.041

MEYERSON, F. Z., MIRRAKHIMOV, S. M., AYDARALIYEV, A. A., and DZHUMUSHEV, M. D., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow, and Kirgiz State Medical Institute, Frunze

"Effect of Preliminary Conditioning on Oxygen Pressure in the Cerebral Cortex During Gradual High-Altitude Hypoxia"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970, pp 252-255

Abstract: Adaptation to the discontinuous action of high-altitude hypoxia has a significant effect on the resistance of the cerebrum to oxygen insufficiency. This effect is considered to be due to the combination of two mechanisms acting at two different levels. One of these mechanisms enhances the transport of oxygen to the brain. The dynamics of the oxygen pressure in the cerebrum of trained and untrained rats subjected to step-wise "ascent" in a pressure chamber was studied polarographically. The O<sub>2</sub> pressure was measured chrono-amperometrically with a 100-micron Pt electrode which had been inserted 500 microns deep into the rats' brains. For each experiment, the electrodes were calibrated in solutions of known O<sub>2</sub> content. Four series of experiments were run, with 11-12 animals in each series. In the first series, untrained animals were tested; in the other series, the

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USSR

MEYERSON, F. Z., et al, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970,  
pp 252-255

animals were trained for periods of 10, 20, or 40 days. Training consisted of keeping the animals in the pressure chamber for 6 hours each day, with the pressure simulating that at an altitude of 1,000 m on the 1st day, 2,000 m on the 2nd day, 3,000 m on the 3rd day, 4,000 m on the 4th day, 5,000 m on the 5th and 6th days, 6,000 m on the 6th and 7th days, and 7,000 m for the remainder of the training period. Some measurements were made with the test animals at a simulated altitude of up to 12,000 m. The results of the measurements were tabulated. It was found that at a height of 4,000 m the drop in cerebral oxygen pressure is still almost the same for both trained and untrained groups. At greater altitudes, the difference between trained and untrained groups becomes more obvious. After 20 and 40 days of training, it was found that protein synthesis in the blood was increased by 60-80%. It is speculated that ATP may be used in the adaptation of the blood to the surrounding medium. It is concluded that, whereas up to a height of 6,000-7,000 m trained alpinists may not experience any discomfort, at higher altitudes disturbances in brain functions may occur.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 042

TITLE--EFFECT OF GAMMA RAYS ON THE VOLT AMPERE CHARACTERISTICS OF DIODES

-U-

AUTHOR--(03)--MIRSAGATOV, SH.A., ISAMUKHAMEDOVA, D.K., YUNUSOV, N.S.

COUNTRY OF INFO--USSR

M

SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ.-MAT. NAUK 1970, 14(2), 57-9

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--VOLT AMPERE CHARACTERISTIC, SEMICONDUCTOR DIODE, SILICON CARBIDE, GAMMA IRRADIATION, ATOMIC DEFECT, ACTIVATION ENERGY, CARRIER DENSITY, CAPTURE CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1871

STEP NO--UR/0166/70/014/002/0057/0059

CIRC ACCESSION NO--AP0137068

UNCLASSIFIED



2/2 042 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0137068  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VOLT AMPERE CHARACTERISTICS OF  
2 TYPES OF SIC DIODES WERE STUDIED BY HIGH GAMMA RAY DOSES, 10 PRIME4  
-10 PRIME9 R, AND BY CURRENTS OF 10 PRIME9 -10 PRIME NEGATIVE A IN BOTH  
DIRECTIONS. DEFECTS WERE FOUND WITH ACTIVATION ENERGIES OF FORMATION OF  
0.03 PLUS OR MINUS 0.08 AND 0.3 EV. THE DIFFERENCES BETWEEN  
THEORETICAL AND EXPTL. VALUES IN CROSS SECTIONS OF THE DEFECTS ARE  
SUBSTANTIATED THROUGH THE DIMINISHING OF EQUIL. CARRIER CONC. OR  
THROUGH VARIOUS INACCURACIES. FACILITY: FIZ.-TERH. INST. IM.  
STARODUBTSEVA, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 541.6+541.49

PUDOVIK, A. N., KURASHIN, I. YA., MURATOVA, A. A., MANAPOV, R. A., YARKOVA, E. G., and MIRSATTOVA, G. M., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"S-Alkyl Diethylthiophosphinites and Their Complexes with Stannic Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1196

Abstract: IR spectra were studied of S-ethyl diethylthiophosphinite (I), S-n-propyl diethylphosphinite (II), diethylchlorophosphine (III), diethyl sulfide (IV) and tributylphosphine (V) in liquid state using solvents with different polarity. Analysis of the data on (I) and (II) indicated that these compounds exist as mixtures of two conformers arising from the rotation around the P-C bond, even though the rotation around the S-C bond could not be excluded. Following complexes were synthesized and studied:  $[(C_2H_5)_2PR]_2SnCl_4$  where  $R=C_2H_5$ ,  $n-C_3H_7$ ,  $[(C_2H_5)_2S]_2SnCl_4$  and  $[(C_4H_9)_3P]_2SnCl_4$ . These complexes were formed because of the donor properties of the phosphorus atom.

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1/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--DEPENDENCE OF THE LATTICE ENERGY OF MOLECULAR CRYSTALS ON THE UNIT  
CELL VOLUME CALCULATED BY THE ATOM ATOM POTENTIAL METHOD AND  
AUTHOR--(02)-KITAIGORSKY, A.I., MIRSKAYA, K.V.

COUNTRY OF INFO--USSR

M

SOURCE--MOLECULAR CRYST., LIQUID CRYST. (GB), VOL. 6, NO. 3-4, P. 339-50,  
FEB 1970  
DATE PUBLISHED----FEB70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--MOLECULAR CRYSTAL, CRYSTAL LATTICE ENERGY, NAPPHALENE,  
ANTHRACENE, THERMAL EXPANSION, THERMODYNAMIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/0679

STEP NO--UK/0000/70/006/03-/0339/0350

CIRC ACCESSION NO--AP0111872

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111872

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

ABSTRACT. THE LATTICE ENERGY (U) OF

NAPHTHALENE AND ANTHRACENE CRYSTAL AS A FUNCTION OF THE UNIT CELL VOLUME

(NU) HAS BEEN CALCULATED BY THE ATOM ATOM POTENTIAL METHODS. THE

EXPERIMENTAL THERMAL EXPANSION TENSOR HAS BEEN USED IN THIS CALCULATION.

THE FIRST AND THE SECOND DERIVATIVES OF THE LATTICE ENERGY WITH RESPECT

TO THE UNIT CELL VOLUME HAVE BEEN OBTAINED FROM THE CURVE U(NU).

METHODS OF COMPARISON OF THESE VALUES WITH EXPERIMENTAL DATA ON THE

CRYSTAL INTERNAL ENERGY AND ITS VOLUME DERIVATIVES AND ALSO WAYS OF

CALCULATING THE VIBRATIONAL PART OF THE CRYSTAL INTERNAL ENERGY HAVE

BEEN DISCUSSED. IT HAS BEEN SHOWN THAT VIBRATIONAL CORRECTIONS TO THE

LATTICE ENERGY AND ITS VOLUME DERIVATIVES ARE SMALL. FACILITY:

INST. ELEMENTO ORGANIC COMPOUNDS. ACAD. SCI. USSR., MOSCOW.

UNCLASSIFIED

Television

UDC: 681.14.523.8

USSR

BRAUDE, G. V., BONCH-BRUYEVICH, A. M., GEL'FANDEYN, Ya. A., GULIN, I. I.,  
KRIVOSHEYEV, M. I., MIRSKIY, G. Ya., TISHCHENKO, I. M., TEL'NYKH, O. A.,  
KHESIN, A. Ya.

"A Television Device for Determining the Coordinates of Point Objects"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 26, Sep 71, Author's Certificate No 313210, p 165

Translation: This Author's Certificate introduces a television device for determining the coordinates of point objects. The device contains a television transmitting tube with memory, an output scanning unit, a video signal processing unit, an erasure unit, a synchronizing unit, a cadence pulse generator, an optical shutter, and a data input module. As a distinguishing feature of the patent, the accuracy of coordinate determination is improved by tying series-connected horizontal and vertical interrogation counters to the output of the cadence pulse generator. The counter outputs are connected through shaping matrixes for horizontal and vertical deflection to the input of the output scanning unit. At the same time, a second output of the vertical interrogation counter is connected through a decoder to the data input module.

USSR

UDC: 621.317.799(088.8)

MIRSKIY, G. Ya.

"A Device Which Measures the Mean Square Value of the Speed of a Normal Random Process"

USSR Author's Certificate No 279211, filed 25 Nov 68, published 11 Nov 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A263 P)

Translation: This Author's Certificate introduces a device for measuring the mean square value of the speed of a normal random process. The device consists of a high-frequency filter, pulse shaper, coincidence circuits, pulse counters, rectifier, analog-digital converter, interrogation pulse oscillator, flip-flop, and spring-loaded pushbutton shorting switch. As a distinguishing feature of the device, the design provides for direct readout determination of the measurement step for the correlation function of the normal random process, assuming a predetermined permissible approximation error. The outputs of the two coincidence circuits are connected through a double-pole two-line switch to the inputs of the pulse counter and a scaling circuit with adjustable scaling factor. The interrogation pulse oscillator is connected to an input of one of the coincidence circuits, and the output of the scaler is connected to the set terminal of the flip-flop. Resumé.

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85

USSR

UDC 621.374.5(088.8)

MIRSKIY, G. YA., VOYEVODIN, V. G.

"Device for Square-Pulse Delay"

USSR Author's Certificate No 271566, Filed 27 Mar 69, Published 15 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G263P)

Translation: A device is proposed for delaying square pulses. It comprises a differential circuit, a front delay circuit, a pulse generator, two rectifiers and a shaping trigger. In order to improve the accuracy of reproducing the duration of the delayed pulse, the device contains a reversible counter, the summing input of which is connected to the output of the pulse generator via a rectifier. The control input of the rectifier is connected to the delayed pulse source; the calculating input of the counter is connected to the output of the pulse generator via a second rectifier the control input of which is connected to the zero output of the shaping trigger; the outputs of the reversible counter are connected via the zero decoder to the unit input of the trigger, to the zero input of which the delayed pulse source is connected via the differential circuit and the delay circuit. The output of the device is the unit output of the trigger.

1/1

USSR

UDC: 621.317.7(088.8)

MIRSKIY, G. Ya.

"A Device for Measuring the Coefficient of Variability of a Random Process"

USSR Author's Certificate No 263291, filed 3 Oct 68, published 10 Jun 70  
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A285 P)

Translation: The proposed device differs from existing units in the fact that it permits direct reading of the coefficient of variability of a random process. A block diagram is given together with a detailed description of the operating principle of the device. E. L.

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- 116 -



USSR

UDC: 681.333:519.2

MIRSKIY, G. Ya.

"A Device for Measuring the Probability Characteristics of Random Processes"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285368, class 42, filed 1 Feb 69, published 29 Oct 70, p 125

Translation: This Author's Certificate introduces a device for measuring the probability characteristics of random processes. The device contains a first centering filter which is connected through a module circuit to the analog-digital converter of a coincidence circuit, a sign discriminator, a reversible pulse counter, a comparison circuit, a DC voltage source, a second centering filter which is connected to one of the two inputs of the comparison circuit, a controllable delay module, a time selector, a flip-flop, and a pushbutton cut-off switch. As a distinguishing feature of the patent, the number of parameters which can be measured is increased by connecting the second input of the comparison circuit to the DC voltage source, while its output is connected to the controlling input of the digital-analog converter and to the input of the time selector through the controllable delay module. The output of this delay module is also con-

1/2

- 32 -

USSR

UDC: 681.333:519.2

MIRSKIY, G. Ya., Soviet Patent No 285368

ected to the movable contact of the first line of a three-line two-pole switch, one fixed contact of this line being connected to the output of the comparison circuit. The movable contact of the second switch line is connected to an input of the comparison circuit, the first fixed contact is connected to the input terminal of the source of the second random process, and the second fixed contact is connected to the second fixed contact of the third line. The first fixed contact of the third line is connected to the input terminal of the source of the first random process, and its movable contact is connected through a single-pole cutoff switch to the inputs of the module circuit and the sign discriminator. The outputs of the discriminator are connected through a two-line switch to a program generator.

2/2

USSR

UDC: 681.333:621.391

MIRSKIY, G. Ya.

"Multichannel Analog-to-Digital Correlator"

USSR Authors' Certificate No 249090, Filed 15 Mar 68, Published 12 Jan 70  
(From RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 8, Aug  
70, Abstract No 8B145P)

Translation: This Author's Certificate introduces a device for automatic determination of the correlation function of a statistically varying analog input signal. The input signal comes to two converters: voltage-to-frequency and voltage-to-time interval. The output variable of the first converter goes in the form of short pulses to the input of several counters via the corresponding time selectors. From the output of the second converter the pulse-duration modulated signal goes to a chain of delay elements from the simplest outputs of which gating signals go to the corresponding time selectors. The variables proportional to the product of the current and delayed input signal are accumulated in the counters. There is one illustration.

1/1

- 76 -

USSR

UDC 669.295:548.526

BOKSHEYN, S. Z., KISHKIN, S. T., and MIRSKIY, L. M.

"Effect of Fine Structure Occurring in Titanium During the Polymorphic (Alpha  $\rightleftharpoons$  Beta) Transformation on Diffusion Mobility"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 210-215

Abstract: Increased-purity titanium was used in the study (impurities: Fe-0.045%, H<sub>2</sub>-0.0044%, O<sub>2</sub>-0.188%, N<sub>2</sub>-0.0026%, and Si and C not detected). Test specimens made of titanium sheet were strips 10 x 20 x 1.8 mm in size. Heat treatment of the specimens was as follows: annealing for 1 hour at approximately the temperature at which the diffusion coefficient was determined in order to preclude change in grain size during diffusion. To obtain maximum defect density, the specimens were then annealed in vacuum in the alpha-state at 800° for 115 hr. Seven specimens were subjected to varying treatments: Pre-annealing and diffusion annealing at different temperatures, in which the temperature of polymorphic transformation was exceeded by a different number of degrees in most cases. Structural imperfections produced during the polymorphic (alpha  $\rightleftharpoons$  beta) transformation can be the principal cause of accelerated diffusion in titanium. The defect state of the structure of the initial phase was inherited a new phase formed during the (alpha  $\rightarrow$  beta) - transformation. It was shown that in a repeated transition of interfaces (alpha  $\rightarrow$  beta  $\rightarrow$  alpha), the diffusion coefficient of Sn<sup>113</sup> titanium increased by a factor of 11.5.

1/2

USSR

BOKSHEYN, S.Z., et al, Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 210-215

Several investigations showed that the alpha-phase of titanium has an extremely defect-intense crystalline structure with high density of structural imperfections. When the beta phase is produced in the ( $\alpha \rightarrow \beta$ ) - transformation, it "inherits" the alpha-phase defects. In addition, new imperfections continue to be formed at temperatures somewhat higher than the critical temperature of the phase transition. This "heredity" is very stable and could not be eliminated by preannealing either at  $950^{\circ}$  or at  $1100^{\circ}$ . Analysis of electron-microscopic photographs of a thin foil with a transmitted beam, and study of x-ray deflection patterns showed that after the ( $\beta \rightarrow \alpha$ ) - transformation following quenching, the concentration of linear imperfections is very high. Thus, diffusional mobility is reduced. Preannealing at the premelting point ( $1550^{\circ}$ ) for 25 hours considerably reduces the density of defects and thus reduces the diffusion coefficient from  $9.1 \cdot 10^{-10}$  to  $0.24 \cdot 10^{-10} \text{ cm}^2 \cdot \text{sec}^{-1}$ , that is, by a factor of 38.

2/2

- 61 -

USSR

MIRSKIY, M., Candidate of Medical Sciences

"Frontiers in Transplantation Science"

Moscow, Meditsinskaya Gazeta, 29 Jan 71, p 3

Abstract: Papers presented at the Fifth All Union Conference On Transplantation of Organs and Tissues indicate that continuous progress is being made in this new branch of medicine. Liver transplants become more successful if the patient's blood is also being shunted through an auxiliary extracorporeal liver, usually that of a hog. Tissue typing according to seven basic antigens should be done on the donor and on the recipient. A newly developed method of selecting immunosuppressants has been used to test 6-mercaptopurine, cyclophosphamide, and antilymphocyte serum, and also to determine doses which depress transplant activity and induce the mitostatic effect. The rules to be observed in experimental heart transplants are summarized. Implantation of donor pancreas, enclosed in biological semipermeable sacs, into pancreatectomized rats reduces the severity of the disease and prolongs survival time. Experiments involving transplantation of a second heart have been done on rats. Success in preserving organs depends on reducing tissue metabolism to a minimum by means of hypothermia and respiratory inhibitors, and on maintaining

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USSR

MIRSKIY, M., Meditsinskaya Gazeta, 29 Jan 71, p 3

this minimum metabolism by means of hyperbaric oxygenation and perfusion with a suitable solution. Some researchers prefer to suspend tissue metabolism for the period of storage and then to re-establish it prior to implantation. The first steps toward establishing an organ bank have been taken in Moscow by organizing an organ collection center at the Institute of Organ and Tissue Transplantation, Academy of Sciences USSR.

2/2

USSR

UDC: 621.396.69:621.314.2

PEYSAKHOVICH, V. A., MIRSKIY, N. L.

"A High-Frequency Transformer With an Open Ferrite Core"

Tr. VNIi tokov vysok. chastoty (Works of the All-Union Scientific Research Institute of High-Frequency Currents), 1970, vyp. 11, pp 208-217 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V318)

Translation: The peculiarities of the transformer are considered. The coupling factor has decisive importance for evaluating the advisability of using the transformer. A formula is recommended for determining this factor. Data are given from industrial tests of an experimental model of the transformer in the high-frequency unit of a mill for welding aluminum sheathing on communications cable. It is shown that the use of a transformer with an open ferrite core in a high-frequency welding device makes it possible to increase welding speed, reduce the capacitance of the condenser bank, and simultaneously reduce the voltage of the load circuit and increase the load of the vacuum-tube oscillator. Six illustrations, two tables, bibliography of three titles.

1/1



USSR

UDC: 681.333:519.2

MIRSKIY, T. Y.

"A Device for Measuring the Conditional Probability Distribution Function of Random Processes"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 278246, class 42, filed 26 May 69, published 5 Aug 70, pp 139-140

Translation: This Author's Certificate introduces a device for measuring the conditional probability distribution function of random processes. The device contains a modulator which is connected to a pulse shaper and through a coincidence circuit to a multichannel amplitude analyzer. The second input of the coincidence circuit is connected to the one-output terminal of a flip-flop whose set terminal is connected through a frequency divider to a time selector which is connected, in turn, to the coincidence circuit. The reset terminal of the flip-flop is connected through a switch to the pulse shaper. As a distinguishing feature of the patent, the device is simplified by connecting the output of the comparison circuit to the pulse shaper and time selector.

1/1

- 28 -

USSR

UDC 576.851.71:576.8.097.34

BARBAN, P. S., and MIRSKIY, V. Ya., Laboratory of Endemic Rickettsioses, Perm' Scientific Research Institute of Vaccines and Sera

"Immunofluorescent Reaction of Rickettsia Microagglutination. Report I. Detection of Antibodies to Rickettsia Prowazeki and Mooseri"

Moscow, Laboratornoye Delo, No 1, 1973, pp 28-30

Abstract: An improved method was tested on 516 samples of sera immune to Rickettsia prowazeki and mooseri, obtained from experimentally infected horses, rabbits, and guinea pigs. The luminescent test reagent is prepared by tagging corpuscular antigens of both rickettsiae with fluorescein isothiocyanate and subjecting the suspension to lyophilization. Prior to use, the reagent is diluted with distilled water. The serum to be tested is diluted in progressive proportions, and a drop of each plus a drop of control sera (check for specificity) and a drop of the antigen (check for spontaneous agglutination) are placed on a glass plate with suitable depressions. A drop of the test reagent is added to each sample and gently stirred. The glass plate, enclosed in a humid container, is incubated at 37°C for 1 hr. The samples are then air-dried and examined microscopically. Bright green rickettsiae are clearly visible against a black background. The result is negative when individual rickettsiae are dispersed throughout the visual field. The result is positive  
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USSR

BAREAN, P. S. and MIRSKIY, V. Ya., *Laboratornoye Delo*, No 1, 1973, pp 28-30

when rickettsial agglutinates of intensity 4+ and 3+ are observed. At a lower intensity, any conclusion as to the specificity of the agglutinin is doubtful. The improved method yielded correct results in all 516 serum samples and proved more sensitive than the standard agglutination reaction and the complement-fixation reaction. Thus, the improved method is recommended for differential diagnosis of *Rickettsia prowazeki* and *mooseri* because it is accurate, fast (about 2 hrs), and simple.

2/2

- 23 -

AA0051848

B.I. MIRSKOV

UR 0482

11

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239597 INDUCTIVE LEVEL METER where a float can move freely along the inductive coils indicating its position corresponding to the measured level. The float has been improved, it has two flanges which make it possible to obtain a parallel reading from two independent coils.

12.12.66 as 1119046/26-10. A.S. ABRAMOV et al.  
(28.7.69) Bul 11/18.3.69. Class 42e. Int.Cl.G 01f.

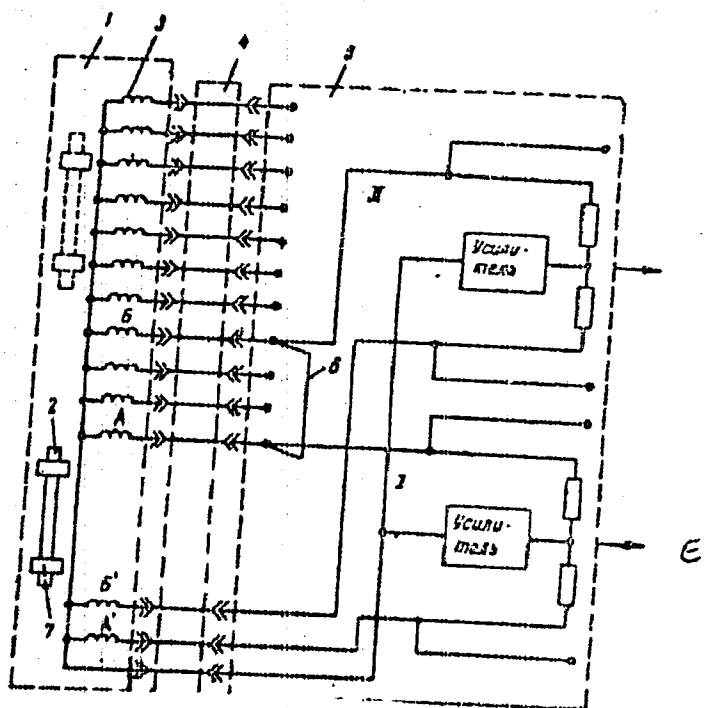
AUTHORS: Abramov, A. S.; Zotov, S. V.; Maslov, G. S.; Vargin, B.A.;  
Shorin, N. I.; Korniyushin, P. M.; Mirskoy, B. L.; Chistyakov, N. N.;  
Mosyakov, V. A.; Kozlovskiy, G. V.; Chichigin, I. B.; Batov, V. A.;  
Golovachev, V. T.; Lyakhterov, M. N.; Kobelev, Yu. M.

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AA0051848



N/2

19820277

USSR

UDC 51:155.001.57:612.82

MIRTCHYAN, S. O.

"Neurons and Neuron Nets. (Introduction to the Theory of Formal Neurons and Neuron Nets)"

Neyrony i Neyronnye Seti. (Vvedeniye v Teoriyu Formal'nykh Neyronov i Neyronnykh Setey). [English Version Above], Moscow, Energiya Press, 1971, 232 pages, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V842 K, unsigned).

Translation: Elements of the theory of formal neurons and neuron nets are presented, as well as certain problems of technical applications. Brief information is presented on the principles of construction of the central nervous system and on structural-functional properties of the nerve cell (biological neuron) as a prototype of the formal neuron. The basic mathematical apparatus used in analysis and synthesis of formal neurons and neuron nets is described. Algorithms for synthesis of formal neurons and simple nets of these neurons are presented. Problems of technical realization and application of formal neurons in automation and computer equipment are studied.

1/1

- 55 -

USSR

UDC 612.79.014.482.3

MIRTOV, A. V., RAPPOPORT, I. A., and TARATUKHIN, V. R., Leningrad

"Effect of Soft Beta Radiation on the Sorption Properties of the Skin"

Moscow, Meditsinskaya Radiologiya, No 3, 1972, pp 64-66

Abstract: Rats were exposed to soft Xe<sup>133</sup> beta radiation at 6.0, 9.4, and 14.7 rad and at various times thereafter injected intravenously with neutral red. One hour later, when sorption of the dye in the skin was greatest, the animals were decapitated and specimens were taken from irradiated areas to determine the amount of dye in 1 g of tissue for comparison with the controls. The results failed to show any significant difference between the experimental and control animals with respect to the amount of dye in the specimens, suggesting that soft X<sup>133</sup> beta radiation at the doses used does not injure skin tissue. None of the irradiated animals developed visible skin lesions.

1/1

USSR

UDC 519.281

MIRTOV, V. K., SOBOLEZ, V. N.

"Regression Methods of Identification Based on Orthogonal Expansions"

Identifikatsiya [Identification -- Collection of Works], Moscow, Nauka Press, 1970, pp 23 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V140 by Yu. Shinakov).

Translation: The problem of active identification of nonlinear dynamic systems is studied, which is reduced to calculation of estimates of parameters  $a_0, a_1, \dots, a_n$  of the system being studied, characterizing its dynamic properties, on the basis of coefficients  $A_1, A_2, \dots, A_m$  of the orthogonal expansion of the reaction of the system to a test signal. In order to determine the parameters of the dynamic system during the testing process, it is suggested that the regression  $f_i = M[a_i | A_1, A_2, \dots, A_m]$  of parameters of the system with respect to coefficients  $A_1, A_2, \dots, A_m$  of the expansion of its reaction be used. Functions  $f_i, i = 0, 1, \dots, n$ , are defined for dynamic tests of a system model.

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USSR

UDC 541.122.2

MIRTSKHULAVA, A. A., RAKOV, V. V., LAYNER, B. D., MIL'VIDSKIY,  
M. G., SAKVARELIDZE, L. G., State Scientific Research and Design  
Institute of Rare Metals Industry

"Study of the Phase Equilibrium in Gallium Arsenide-Aluminum  
Arsenide System"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 9, 1971, pp 2374-  
2375

Abstract: The ternary phase diagram of the quasibinary gallium  
arsenide-aluminum arsenide system with 0-15 mol% aluminum arsenide  
was determined using gravimetric physicochemical analysis.  
Arsenic concentration in the melt, temperature of the melt, and  
arsenic vapor pressure were determined simultaneously by the above  
method. Vacuum degassing of the starting materials and of the  
ampoule and graphitization of the crucible prevented aluminum from  
interacting with the container and with oxygen. To determine the  
liquidus line polythermal cuts of the diagram were plotted for  
alloys with different ratios of nonvolatile components. The  
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USSR

MIRTSKHULAVA, A. A., et al, Zhurnal Fizicheskoy Khimii, Vol 45,  
No 9, 1971, pp 2374-2375

maximum liquidus temperature within each cut corresponded to a Ga-Al-As melt with 50 at.% As. The projections of the liquidus line of the quasibinary system on T-x, F-x, and P-T planes are shown. The experimental coefficient of interdiffusion of the melt components, i.e., Ga, Al, and As, was found to decrease from  $1.5 \cdot 10^{-4}$  to  $1.1 \cdot 10^{-4}$  sq. cm./sec., when aluminum arsenide concentration in the melt was increased from 0 to 15 mol.%.

2/2

1/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--SPECTRAL AND INTEGRAL ABSORPTION IN THE 5.3-MU ND BAND -U-

AUTHOR--(02)-MOSKALENKO, N.I., MIRUMYANTS, S.O.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, FIZ. ATMOS. OKEANA 1970, 6(2), 208-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, NITROGEN, NITROGEN OXIDE, LEAST SQUARE METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3009/0112

STEP NO--UR/0362/70/006/002/0208/0209

CIRC ACCESSION NO--AP0138977

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138977

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRA OF NO PLUS N SUB2 MIXTS. WITH DIFFERENT CONCNS. WERE RECORDED WITH PREVIOUSLY DESCRIBED EQUIPMENT (N. I. MOSKALENKO, 1969) AT EFFECTIVE PRESSURES OF 1, 5, 10, 20, 40, 100, 200, 400, 760, AND 3200 TORR. THE DATA WERE APPLIED TO THE DETN., BY THE LEAST SQUARES METHOD, OF THE PARAMETERS OF THE SPECTRAL TRANSMISSIVITY FUNCTION (B. M. GOLUBITSKII, AND N. I. MOSKALENKO, 1967). THE CALCD. AND EXPTL. TRANSMISSION SPECTRA AGREE WELL.

UNCLASSIFIED

1/3 ; Q39 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--CHANGE IN THE SPECTRAL COEFFICIENTS OF RADIATION ATTENUATION BY  
HAZE IN THE SPECTRAL REGION 0.59-13 MICRONS -U-  
AUTHOR--(02)--FILIPPOV, V.I., MIRUMYANTS, S.O.

M

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,  
VOL VI, NO 8, 1970, PP 641-643.  
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ATTENUATION, AEROSOL, ATMOSPHERE, TURBIDITY, IR RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1945

STEP NO--UR/0362/70/006/006/0041/0643

GIRC ACCESSION NO--AP013-470

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AP0135470

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE USE OF AN ELECTRONIC COMPUTER AFFORDS EXTENSIVE POSSIBILITIES FOR DIRECT COMPUTATION OF THE SPECTRAL COEFFICIENTS OF AEROSOL ATTENUATION ALPHA (LAMBDA) ON THE BASIS OF THE EXPRESSIONS OF THE MIE THEORY OR CORRESPONDING APPROXIMATE FORMULAS UNDER THE CONDITION OF STIPULATION OF THE MICROPHYSICAL PROPERTIES OF PARTICLES RESPONSIBLE FOR ATMOSPHERIC TURBIDITY. LACK OF RELIABLE DATA ON THE SPECTRUM OF DISTRIBUTION OF AEROSOL PARTICLES BY SIZE IS RELATED TO DIFFICULTIES IN MEASURING THE PARAMETERS OF THE AEROSOL MEASURING 0.07-0.6 MICRON AND NEVERTHELESS PLAYING AN IMPORTANT ROLE IN FORMING THE TYPE OF SPECTRAL DEPENDENCE ALPHA (LAMBDA). ACCORDINGLY, IT IS NECESSARY TO OBTAIN DATA ON THE AEROSOL BY NUMEROUS MEASUREMENTS OF THE OPTICAL PROPERTIES OF ATMOSPHERIC HAZES. ONLY SUCH MEASUREMENTS, INVOLVING REGISTRY OF FORMATION AND VARIABILITY OF AEROSOL STATES WITH CHANGES IN THE SURROUNDING METEOROLOGICAL CONDITIONS CAN GIVE FUNDAMENTAL INFORMATION ON THE PHYSICAL LAWS DETERMINING THE FORMATION OF OPTICAL WEATHER. THIS IS A CONTINUATION OF A PRELIMINARY REPORT BY THE AUTHORS WHICH WAS PUBLISHED ONLY IN ABSTRACT FORM. THE EXAMPLES CONSIDERED IN THIS PAPER CORRELATE WITH THE RESULTS OF EARLIER INVESTIGATIONS INDICATING A DEFINITE ROLE OF THE CONDENSATION PROCESS IN THE FORMATION OF AEROSOL SITUATIONS. THE EXAMPLES SHOW THAT AEROSOLS OBSERVED UNDER NATURAL CONDITIONS CAN DIFFER SUBSTANTIALLY IN THEIR PARTICLE SIZE SPECTRUM, WHICH IS DEPENDENT ON THE CHANGE IN METEOROLOGICAL CONDITIONS AND AS A RESULT, ON THE SEASON OF THE YEAR. IT IS ESSENTIAL TO TAKE INTO ACCOUNT THE LIFETIME OF THE HAZE.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135470

ABSTRACT/EXTRACT--DURING RELATIVELY BRIEF SUMMER HAZES THE PARTICLE DISTRIBUTION IS SHARPLY LIMITED UPWARD. DURING OTHER SEASONS, WHEN THERE IS AN INCREASE IN THE DURATION AND RECURRENCE OF STATES CHARACTERIZED BY A METEOROLOGICAL RANGE OF VISIBILITY LESS THAN 20 KM, THE LARGE PARTICLE FRACTION PLAYS AN IMPORTANT ROLE IN THE ATTENUATION OF INFRARED RADIATION.

UNCLASSIFIED

USSR

UDC 612.014.42

BOGACH, P. G., KONDRAT'EVA, I. D., and MIRUTENKO, V. I., Institute of Physiology and Chair of Biophysics, Kiev University

"Effect of a Constant Magnetic Field on the Membrane Potential of Neural Cells in Ganglia Isolated From the Mollusk *Planorbis corneus*"

Kiev, *Fiziologichnyy Zhurnal*, Vol 17, No 6, Nov/Dec 71, pp 760-764

Abstract: Results of experiments conducted to determine the effect of constant magnetic fields (CMF) with intensities of 130, 600, 1,300, and 1,800 H on the membrane potential (MP) of neural cells in ganglia isolated from the mollusk *Planorbis corneus* are presented in the article. The CMF were formed by passing a direct current through an electromagnet. The ring-shaped isolated ganglion consisting of six pairs of symmetric and one pair of nonsymmetric ganglia was suspended between the two poles of the electromagnet in a special chamber through which a solution standard for this type of mollusks was flowing. Microelectrodes filled with a 3 M solution of KCl were used to record the MP of the cells. The data obtained revealed that 6-hour exposure of the cells to the action of the the CMF with intensities of 130, 600, 1,300 and 1,800 H reduces the MP of the cells respectively by 45, 40, 47 and 40.7% as compared with controls. The changes in the MP values, however, are not related to the 1/2



USSR

BOGACH, P. G., et al., Fiziologichnyy Zhurnal, Vol 17, No 6, Nov/Dec 71, pp 760-764

intensities of the CMF, or duration of their action, for the higher the intensity of the CMF the greater the reduction rate of the MP even following exposure for only a period of 4 hours to the action of the CMF. This is manifested also by the deep irreversible changes in the nerve cells when the CMF action is suspended for 3 hours. The assumption is that the biological effect of CMF on the MP is due to the action of the fields on the free radicals of the active metabolite cells with the subsequent effect on the permeability of the cellular membrane to the ions responsible for the generation of the MP.

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USSR

UDC 615.23:547.789.5

MIRYAN, N. I., TRINUS, F. P., IZOTOVA, P. V., FADEICHEVA, A. G.,  
and LISUNKIN, YU. I., Kiyev Scientific Research Institute of  
Pharmacology and Toxicology

"Biological Activity of Some Thiazole Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 8, Aug 73,  
pp 17-20

Abstract: Some thiazole derivatives act as breathing stimulators and as antagonists to morphine, nicotine and to barbiturates. One of the more active agents of this group is 2,4-diamino-5-phenylthiazole hydrochloride (I) -- the so called daptazol. A simplified synthetic method for this compound with slightly improved yield has been developed, and using this method, two new derivatives were synthesized: 2,4-diamino-5-(p-fluorophenyl)thiazole hydrochloride (II), and 2-4-diamino-5-(o-nitrophenyl)thiazole hydrochloride (III). Biological studies were carried out which showed that replacement of the amino groups in the 2 and 4 positions of the thiazole ring by hydroxyl groups resulted in disappearance of the characteristic antimorphine action. The toxicity was increased. Introduction of substituents in the phenyl ring does not change the hypotensive activity of these compounds.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

1/2 020  
TITLE--MAGNETIC ANISOTROPY OF NICKEL COPPER FERRITE AND THE CONTRIBUTION  
OF NI PRIME2 POSITIVE IONS IN THE TETRAHEDRAL SUBLATTICE TO THIS  
AUTHOR--(03)--MIRYASOV, N.Z., IVANNIKOV, V.L., KASHLINSKIY, A.I.

COUNTRY OF INFO--USSR

M

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1256-9

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--MAGNETIC ANISOTROPY, FERRITE, NICKEL COMPOUND, COPPER  
COMPOUND, MAGNETIZATION, FERROMAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3G01/0374

STEP NO--UR/0181/70/012/004/1256/1259

CIRC ACCESSION NO--AP0126129

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126129

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM MEASUREMENTS OF THE PARAMETERS OF FERROMAGNETIC RESONANCE, DETN. WAS MADE OF THE CONTRIBUTION TO THE ANISOTROPY CONST. OF NI PRIMEZ POSITIVE IN THE TETRAHEDRAL SUBLATTICE. A SINGLE CRYSTAL WAS INVESTIGATED OF THE COMPN. NI SUBOTIMES72 CU SUBOTIMES1 FE SUB2TIMES18 O SUB4 AT 20-200DEGREES BY THE METHOD OF FERROMAGNETIC RESONANCE AT 9270 MNZ. SP. SATN. MAGNETIZATION, SIGMA SUBS, WAS MEASURED AT NEGATIVE 190 TO POSITIVE 300DEGREES, WHICH ALLOWED ONE TO EXTRAPGLATE THE TEMP. DEPENDENCE TO 0DEGREESK AND CALC. THE MAGNETIC MOMENT PER MDL. OF THE FERRITE. A CHARACTERISTIC PECULIARITY OF THE RESONANCE DATA IS THE PRESENCE OF 2 SHARPLY SEPD. ABSORPTION LINES: 1 AT LOW FIELDS AND THE OTHER AT HIGH FIELDS WITH A DISTORTED SHAPE FROM THE SIDE OF STRONG FIELDS. THE 1ST LINE IS APPARENTLY RELATED TO RESONANCE DOMAIN BOUNDARIES. CATIONIC DISTRIBUTION AND THE ANISOTROPY CONSTS. WERE CALCD. FACILITY: MOSK. GOS. UNIV. IM. LOMGNOSSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CHARACTERISTICS OF RNA OF RAT RETICULOSARCOMA 321,KRC BY MEANS OF  
COLUMN CHROMATOGRAPHY -U-

AUTHOR--MIRYEM, L.M.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 268-273

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RNA, RAT, LIVER, SARCOMA, CHROMATOGRAPHY, DNA, RADIOACTIVE  
TRACER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0265

STEP NO--UR/0301/70/016/003/0268/0273

CIRC ACCESSION NO--AP0120955

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120955

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FRACTIONATION OF TOTAL RNA ISOLATED FROM RETICULOSARCOMA 321,KRC AND NORMAL RAT LIVER WAS MADE BY MEANS OF CHROMATOGRAPHY ON MAK. THREE PEAKS WERE OBTAINED: THE FIRST TWO PEAKS ARE S AND RRNA. THE THIRD PEAK IS MOSTLY COMPOSED FROM DNA LIKE RNA. THE STUDY OF RADIOACTIVITY SHOWN THAT THE AMOUNT OF LABELLED FRACTIONS OF RNA FROM THE NORMAL LIVER WAS MORE THAN THAT OF RNA FROM NORMAL LIVER RETICULOSARCOMA 321,KRC. FOR EACH FRACTION OF RNA RETICULOSARCOMA 1 PEAK OF RADIOACTIVITY IS DEMONSTRATED. IN THE CASE OF LIVER THE AMOUNT OF NEWLY SYNTHESIZED FRACTION IS VARIED FROM 2 TO 5. SPECIFIC RADIOACTIVITY OF DNA LIKE RNA FROM RETICULOSARCOMA 321,KRC AND FROM NORMAL LIVER OBTAINED ON MAK COLUMNS IS GREATER THAN THAT OF TOTAL RNA FROM THE SAME TISSUES. FACILITY: LABURATORY OF BIOCHEMISTRY P. A. GERTZEN RESEARCH INSTITUTE OF ONCOLOGY, MOSCOW.

UNCLASSIFIED

USSR

Power, Engine, Turbine, Pump

UDC 621.436.13-723

PILYUGIN, A. A., MIRYUSHCHENKO, A. A., and CHUKHRIYENKO, S. I.

"Diesel Engine Cylinder Lubricator"

USSR Authors' Certificate No 362970, Cl. F 16n 23/00, filed 15 Oct 70, published 20 Dec 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1973, p 76)

Abstract: The device contains a case which is mounted in the cylinder sleeve with a cavity for feeding oil to the sleeve duct and a check valve placed in this cavity. The unique feature of the device is that, to make the feed more even and the oil usage more efficient, the valve is situated at the cavity exit on the side of the sleeve and has a spring-actuated shank in the cavity and a rod in the duct. A second version of the device has a damper mounted in the cavity. The device is illustrated.

1/1

USSR

UDC 616.988.25-092.4-07:616-008.931-074

MIRYUTOVA, T. L., and PESHKOVA, Ye. A., Tomsk Scientific Research Institute of Vaccines and Sera

"Activity of Some Glycolytic Enzymes in the Liquid Phase of Tissue Cultures Infected With Venezuelan Equine Encephalomyelitis Virus"

Moscow, Voprosy Virusologii, No 6, 1972, pp 717-720

Abstract: Activity of enzymes involved in carbohydrate metabolism was studied in chick and human embryo fibroblast cultures infected with VEE virus. Within 4 hours after infection of monolayers, glucose phosphate isomerase activity increased significantly, attained 125% of control by 48 hours at the peak of virus activity, and subsequently dropped. By 24 hours after infection lactate dehydrogenase activity twice exceeded that in controls. Aldolase activity remained normal until 48 hours, probably because the enzyme is incapable of penetrating intact cells, and increased after cell death. Thus it is demonstrated that the activity of enzymes responsible for providing energy to growing virus reflects the changes of virus reproduction rate.

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USSR

UDC 576.858.083.3.098.31:577.164.11

MIRYUTOVA, T. L., Tomsk Scientific Research Institute of Vaccines and Sera

"Possibility of Determining Thiamine in Nutrient Media Used for Tissue Culture and Accumulation of Virus"

Moscow, Laboratornoye Delo, No 9, 1971, pp 566-567

Abstract: A method is described for determining thiamine in medium 199. One part proteinfree filtrate or medium and two parts butyl alcohol are placed in a separatory funnel and shaken for 3 min. The mixture is allowed to stand for 30 min and after the liquid stratifies, the lower layer is removed for analysis. 2 ml each of the prepared sample are poured into four cylinders (two experimental, two control) to which 2 ml of methyl blue are added. 2 ml of a 1% potassium ferrocyanide solution is added to the experimental samples. 2 ml of a 30% solution of sodium hydrate, 2 or 3 drops of H<sub>2</sub>O, and then 10 ml of butyl alcohol are introduced into all the cylinders. The mixture is shaken for 2 min and allowed to stand in the dark for 40 to 60 min. As soon as the liquid stratifies, the top layer is transferred with a pipet to a dry test tube, after which 2 ml of ethyl alcohol is added. After standing in the dark for 20 to 30 min, the fluorescence is measured with a No 1 light filter for folic acid and a No 2 filter for thiamine.

1/1

172 020 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ON THE EFFECT OF SURFACTANTS ON STRUCTURE FORMATION IN POWDER  
DISPERSIONS IN NONPOLAR LIQUID MEDIUM AND IN AIR -U-  
AUTHOR--(05)--BELUGINA, G.V., KONSTANTINOVA, V.V., MIRZAABDULLAYEVA, D.,  
ZAKLYEVA, S.KH., REBINDER, P.A.  
COUNTRY OF INFO--USSR  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 177-181  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COAGULATION, AIR, CALCIUM CARBONATE, CALCIUM FLUORIDE, IRON  
OXIDE, HYDROCARBON, REACTION KINETICS, SURFACTANT, AEROSOL CHEMISTRY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/0768 STEP NO--UR/0069/70/032/002/0177/0181  
CIRC ACCESSION NO--AP0108969  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109969

A3STRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDITIONES OF SURFACTANTS CHANGES THE SEDIMENTATION KINETICS OF SUSPENSIONS (CACD SUB3, FE SUB2 O SUB3, CAF SUB2), INCREASES THE VOLUME FRACTION OF THE SOLID PHASE IN THE SEDIMENT AND DIMINISHES THE STRENGTH OF COAGULATION STRUCTURES IN POWDER DISPERSIONS BOTH IN A LIQUID HYDROCARBON MEDIUM AND IN AIR. IN DISPERSIONS WITH MIXED SOLID PHASES SMALL ADDITIONS OF A SECOND DISPERSED PHASE HAVE A SIMILAR EFFECT.

UNCLASSIFIED

Immunology

USSR

MIRZAAKIMEDOV, T. P., MIRISMAILOV, M. I. and BAKHIMOVA, F. I., Tashkent  
Scientific Research Institute of Vaccines and Sera

"Some Immunological Shifts During Rabies Vaccination"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1972, pp 76-77

Abstract: The effect of rabies vaccination on the dynamics of formation of specific virus-neutralizing antibodies and of autoantibodies to liver, spleen and brain was studied in healthy rabbits. The passive hemagglutination reaction, Nikolaev's method of fractionating the "unprecipitated antigen-antibody" complex and neutralization reactions in white rats were used to measure antibody levels. It was found that autoantibodies began to appear on day 7, peaked on day 21, diminished by day 30 and were rarely detectable on day 37. The specific virus-neutralizing antibodies appeared on day 7, increased markedly between days 14-21 and reached maximal titers by days 30-37.

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I/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--VARIATIONS IN QUANTITATIVE CORRELATIONS IN BLOOD PHOSPHOLIPIDS  
FOLLOWING THE DEVELOPMENT OF EXPERIMENTAL THROMBOSES -U-  
AUTHOR-(03)-KARAGEZIAN, K.G., DVAKIMYAN, S.S., MIRZAAVAKYAN, G.L.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 250-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BLOOD, PHOSPHOLIPID, THROMBOSIS, DOG, BLOOD COAGULATION,  
POTASSIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/1664 STEP NO--UR/0020/70/191/001/0250/0252  
CIRC ACCESSION NO--AT0133569  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPTL. THROMBOSIS IN DOGS IT WAS FOUND THAT WITHIN 2 DAYS OF ITS DEVELOPMENT THE SHIFTS IN THE LEVEL OF PHOSPHOLIPIDS WERE CONSIDERABLE, ESP. IN THE APPENDAGE AFFECTED BY THROMBOSIS. THESE CHANGES, BESIDES INTRAVASCULAR THROMBOFORMATIONS AND LOCAL DISTURBANCES, INVOLVE NEUROHUMORAL SHIFTS. THE CHANGES IN THE CLOTTING OF THE BLOOD DEVELOP WITHIN 2 DAYS ALONG WITH ACTIVATION OF BLOOD CLOTTING IN BOTH LIMBS OF THE EXPTL. ANIMALS. LOWERED K IN FIBRINOGEN DEVELOPS IN THESE 2 DAYS AND MAY BE CAUSED BY REFLEX RISE OF ACID PHOSPHOLIPIDS IN THE BLOOD. FACILITY: INST. BIOKHM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 632.95

KAMILOVA, R. M., KHIKMATOV, A., RAKHIMOV, A. A., MAKHSUMOV, A. G., SAFAYEV, A., MIRZABAYEV, E. A.

"Herbicide"

USSR Author's Certificate No 336006, filed 7 Oct 69, published 22 May 72  
(from RZh-Khimiya, No 5 (II), 1973, Abstract No 5N653)

Translation: A compound 2,5-diphenylthiophene (I) is proposed to control weeds in planted fields. In a dosage of 2-3 kg/hectare, I exhibits a herbicidal activity with respect to Shiritsa, Japanese barnyard millet, datura and partulak without damaging cotton.

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- 51 -

USSR

UDC 632.96

KAMILOVA, R. M., KHIKMATOVA, A., MAYOROV, S. A., MAKHSUKOV, A. G., SAFAYEV, A., and MIRZABAYEV, E. A.

"A Herbicide"

USSR Author's Certificate No 324025, filed 7 Oct 69, published 18 Feb 72  
(from RZh-Khimiya, No 22, Nov 72, Abstract No 221489 P)

Translation: It is proposed that 2,5-bis-(2,4,6-trichlorophenoxyethyl) thiophene (I) be used as a high-quality herbicide. Pregermination treatment with compound I in a dose of 10 kilograms per hectare killed 100% of the weeds, (purslane, barnyard millet) without damage to cotton. T. A. Melyayeva.

1/1

- 64 -



USSR

UDC 66.074.7

TURSUNOV, M., RIZAYEV, N. U., MIRZAKARIMOV, R. M., IBRAGIMOV, A. P., and SUKHININA, L. A., Tashkent Polytechnical Institute

"Change in the Sorption Capacity of Ion Exchange Resin Towards Gossypol and Free Fatty Acids Under the Influence of  $\gamma$ -Irradiation"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 8, Aug 72, pp 1828-1832

Abstract: Increase in the  $\gamma$ -irradiation dose leads to an increased swelling of the anion exchange resin AV-17-6(m) and EDE-10p in the OH<sup>-</sup> form in distilled water and in methanol; the anion exchange resin EDE-10p in the CO<sub>3</sub><sup>2+</sup> form and FAN-2 in the OH<sup>-</sup> form increase their swelling also, but only to a certain specific dose. The weight of the anion exchange resin has been noted to increase also. Under the influence of  $\gamma$ -irradiation AV-17-6(m) anion exchange resin in the OH<sup>-</sup> form exhibits selective sorption towards gossypol. Both the AV-17-6(m) and the EDE-10p anion exchange resins in the CO<sub>3</sub><sup>2+</sup> form become lighter in color under the influence of increasing radiation dose.

1/1

USSR

UDC: 539.172.3:539.2

ARTEM'YEV, A. N., ALESHIN, K. P., MIRZABAYEV, R. M., SKLYA-  
REVSKIY, V. V., SMIRNOV, G. V., and STEPANOV, Ye. P.

"Mössbauer High Angular Resolution Diffractometer"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 64-66

Abstract: A Mössbauer diffractometer, designed for a broad variety of measurements with x-rays and gamma radiation, is described. The essential characteristic of this instrument is the low count rate of gamma quanta even with strong gamma ray sources, thus resulting in the repeated and prolonged measurement of a single peak. The instrument contains an x-ray tube in addition to the Mössbauer source, thus permitting the correction and investigation of a crystal structure preparatory to operation with gamma radiation. The basic structure of the instrument is that of the URS-50IM x-ray equipment. A description of it is given together with an external-view photograph and a sample of the spectrum for a quartz crystal and an  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> monocrystal. The authors thank I. B. Filippov and M. A. Volkov for their assistance in preparing and setting up the instrument. They are associated with the Institute of Atomic Energy at Moscow.

1/1

- 90 -

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF THE MOLECULAR WEIGHT OF POLYMERIC STATIONARY LIQUID  
PHASES WITH THERMINAL FUNCTIONAL GROUPS ON THE RELATIVE RETENTION TIME  
AUTHOR--(03)--ALISHGYEV, V.R., BEREZKIN, V.G., MIRZABAYEV, G.A.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1365-7 (PHYS CHEM)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MOLECULAR WEIGHT, GAS CHROMATOGRAPHY, POLYETHYLENE, MALEIC  
ACID, ADIPIC ACID, CARBOXYLIC ACID ESTER, POLYMER, ETHANOL, PROPANOL,  
BENZENE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0711 STEP NO--UR/0020/70/190/006/1365/1367  
CIRC ACCESSION NO--AT0124381

UNCLASSIFIED

272 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--ATO124381

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. REVERSE GAS CHROMATOG. (T. C. DAVIS, ET AL., 1966) WAS USED TO DET. THE MOL. WT. (M) OF POLY(ETHYLENE MALEATE ADIPATE) (I). I WAS DEPOSITED ON NAOL AND USED AS THE STATIONARY PHASE IN THE GAS CHROMATOG. OF ETOH, PROH, AND C SUB6 H SUB6 MIXTS. THE REALTIVE RETENTION TIMES OF THESE ALCS. ARE LINEARLY PROPORTIONAL TO M PRIME NEGATIVE I. THE METHOD REQUIRES THE USE OF I OF KNOWN MOL. WT. FOR CALIBRATION. THIS METHOD IS ALSO SUGGESTED FOR USE IN KINETIC STUDIES OF POLYMERS WITH REACTIVE GROUPS WHICH UNDERGO CHEM. CHANGES AND HAVE AFFINITY FOR VOLATILE COMPS. FACILITY: INST. NEFTEKHIM, SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 537.226+537.311.33/:/537+535

AZIMOV, S. A., LUTFULLAYEV, the late A., MIRZABAYEV, M., and KHAYRULLAYEV, SH.,  
Physicotechnical Institute imeni S. V. Starodubtsev, Academy of Sciences Uzbek  
SSR

"Effect of Single Strain on Resistivity of Hexagonal Silicon Carbide"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh  
Nauk, No 3, 1973, pp 52-54

Abstract: For purposes of studying the effect of mechanical compression stress (along the  $[11\bar{2}0]$ ,  $[10\bar{1}0]$ , and  $[0001]$  axes) on the electric resistance of commercial  $\alpha$ -SiC (6H) single crystals of the n and p types, the authors studied the effect of single elastic strain on the resistivity of hexagonal silicon carbide at nitrogen, room, and higher temperatures. The results of longitudinal motional resistance measurements show that the variation dependence of motional resistance with temperatures in the region where acoustic phonon and impurity ion scattering prevails is close to the dependence of  $\Delta\rho(X)/\rho(0)$  on  $T^{-1}$  and is similar to the dependence obtained for Ge, Si. This indicates that the motional resistance of hexagonal silicon carbide

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USSR

AZIMOV, S. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1973, pp 52-54

samples in the impurity conduction region is due to the effect of charge carrier redistribution between conduction band valleys.

Preliminary studies established that in samples with  $\rho > 1 \text{ ohm}\cdot\text{cm}$  the absolute motional resistance coefficient increases with an increase in the temperature and declines appreciably with a decrease in the temperature to  $77^\circ \text{K}$ . This is apparently due to the change in the activation energy of the impurities and, hence, in the free carrier concentration as a function of  $\chi$  and  $T$ . The shape of the dependence of  $\Delta\rho/\rho$  on  $\chi$  and  $T$  for samples with p-type conduction evidently indicates the degeneracy of the valence band of silicon carbide at the extreme point.

2/2

- 25 -

Acc. Nr:

AP0044694

M

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,  
pp 76-96

THE PRIMARY STRUCTURE OF VALINE TRANSFER RNA 1.  
3. THE RECONSTRUCTION OF THE MOLECULE

Mirzabekov, A. D.; Aksel'rod, V. D.  
Venkstern, I. V.; Li, L.; Krutilina, A. I.; Bayev, A. A.

Institute of Molecular Biology, Academy of Sciences, USSR, Moscow

The final stages of analysis of the valine tRNA 1 from *Saccharomyces cerevisiae* and the reconstruction of the molecule is described. Large fragments (metamers) were obtained from the separated 3'- and 5'-halves of tRNA<sup>Val</sup> and their oligonucleotide composition was determined by means of a microchromatographic method. The tRNA<sup>Val</sup> primary structure was formulated.

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19771428

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Acc. Nr: AP0044697

M

Ref. Code: UR 0453

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,  
pp 97-109

THE PRIMARY STRUCTURE AND SOME PHYSICAL PROPERTIES  
OF YEAST VALINE TRANSFER RNA 3

A. I. KRUTILINA, A. D. MIRZABEKOV, T. V. VENKSTERN  
and A. A. BAYEV

Institute of Molecular Biology, Academy of Sciences, USSR, Moscow

Valine transfer RNA 3 was isolated from *Saccharomyces cerevisiae*. Its content was 0.3 per cent in the total tRNA and 5—7 per cent in the valine tRNA. The purity of the preparation was 75—80 per cent. The partial analysis of pyrimidyl- and guanyl-RNase oligonucleotides of tRNA<sub>3</sub><sup>Val</sup> revealed the nucleotide sequence of tRNA<sub>3</sub><sup>Val</sup> to be probably the same as compared with that of tRNA<sub>1</sub><sup>Val</sup>. Chromatography on MAK (methylated serum albumin sorbed on kieselgel) column, gel filtration on Sephadex and melting curve determination of

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REEL/FRAME

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AP0044697

$\text{tRNA}_3^{\text{Val}}$  and  $\text{tRNA}_1^{\text{Val}}$  gave identical results. The distribution coefficients of  $\text{tRNA}_1^{\text{Val}}$  and  $\text{tRNA}_3^{\text{Val}}$  in isopropanol-formamide-phosphate bufer, pH 6.0, were the same. Thus the physical properties of  $\text{tRNA}_1^{\text{Val}}$  and  $\text{tRNA}_3^{\text{Val}}$  after their purification had no significant differences. The different behavior of  $\text{tRNA}_1^{\text{Val}}$  and  $\text{tRNA}_3^{\text{Val}}$  in the countercurrent distribution system may be explained by the assumption that  $\text{tRNA}_2^{\text{Val}}$  is an unstable physical modification of  $\text{tRNA}_1^{\text{Val}}$ .

7/2

19771432

lc

USSR

UDC 547.963.3

MIRZABEKOV, A. D., AKSEL'ROD, V. D., VENKSTERN, T. V., LI, L., KRUTILINA, A. I., and BAYEV, A. A., Institute of Molecular Biology Academy of Sciences USSR

"Primary Structure of Valine Transfer RNA 1 From *Saccharomyces cerevisiae*. 3. Reconstruction of the Molecule"

Moscow, *Molekulyarnaya Biologiya*, No 1, 1970, pp 76-96

Abstract: The first stage of analysis of the primary structure of valine tRNA 1 from *Saccharomyces cerevisiae* and the final reconstruction of the molecule are described. The procedure required obtaining large fragments (metamers) from the separated 3' and 5' halves of tRNA<sub>1</sub><sup>Val</sup> using guanyl RNase, and then determining their oligonucleotide composition with a specially devised micromethod of fractionating and identifying the oligonucleotides. The sequence of the oligonucleotides within each metamer was established by comparing their composition. The tRNA<sub>1</sub><sup>Val</sup> molecule was reconstructed by overlapping both the oligonucleotides of the pyrimidyl and guanyl ribonuclease hydrolysates of the whole molecule and the metamers of its halves.

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USSR

UDC: 537.521

KAGAN, Yu. M., KOLCKOLOV, N. B., LYAGUSHCHENKO, R. I., MILENIN, V. M., and MIRZABEKOV, A. M.

"Investigating the Electron Distribution Function in Hg+Ar and Hg+Kr Mixtures"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 4, April 1971, pp 714-719

Abstract: The measurements made in this article were of the energy distribution of electrons in the positive column of discharges in gases mixing mercury vapor and inert argon and krypton. Such measurements are of practical interest. Because difficulties arise as the result of intense noise, in making these measurements the authors used a tracking probe through which the effect of the space potential variations on the measurement of the distribution function can be eliminated. The measurements were made in a tube measuring 35 mm in diameter with an incandescent cathode. Curves of the distribution are plotted. A comparison

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KAGAN, et al, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 4, April 1971, pp 714-719

was also made of the experimental distribution functions and the functions calculated from the kinetic equation. The estimates made indicate that elastic collisions of electrons and the mercury atoms are negligible compared to the elastic collisions with the inert gas atoms. The authors are associated with the Leningrad State University, imeni A. A. Zhdanov.

2/2

Magnetohydrodynamics

USSR

UDC 533.933

KAGAN, YU. M., KOLOKOLOV, N. B., MILENIN, V. M., MIRZABEKOV,  
A. M., Leningrad State University

"Measurement of the Energy Distribution of Electrons in a Plasma  
in the Presence of Noise"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5, June 1970,  
pp 1319-1321

Abstract: Serious difficulties caused by fluctuations in the discharge for plasma diagnostics generally and probe diagnostics in particular are examined. It is noted that the sensitivity and, in certain cases, the applicability of the probe method are considerably limited by the intensity of discharge noises. The effect of noises on a technique using modulation of the probe current to study electron distribution is said to be a masking of the signal of the second derivative on the one hand and a distortion of the shape of the distribution itself of the other, due to oscillations in the potential of the space where the probe

1/3

USSR

KAGAN, YU. M., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5, June 1970, pp 1319-1321

is located. The "tracking" probe method is proposed for measuring the energy distribution of electrons in the presence of noise. The authors showed earlier that to obtain the real averaged distribution function in the presence of periodic plasma fluctuations the variable component of the potential of the measuring probe must "track" the space potentials. The following principle was used for measurements in a plasma in the presence of oscillations: a reference probe at the potential of the floating probe was placed close to the measuring probe. The change in the floating potential of this probe caused by oscillations of the plasma is transmitted to the circuit of the measuring probe. In the experiments described, an emitter follower with the following characteristics was used: input resistance 1 mw, output resistance 5  $\omega$ , transmission band 30-600,000 Hz. The SK-4-3 spectral analyzer was used to analyze the spectrum and the amplitude of the noises. The energy distribution of electrons in a mercury-argon mixture at a mercury vapor pressure of  $2.5 \cdot 10^{-3}$  torr and an argon pressure of 0.6 torr was measured for a discharge current of 100 ma. The spectrum of oscillations between  
2/3

- 92 -

USSR

KAGAN, YU. M., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5,  
June 1970, pp 1319-1321

the measuring probe and the ground before and after inclusion of the emitter follower is given. It was shown that the application of the tracking probe method makes it possible to measure the distribution function in a plasma in the presence of noises when the use of the ordinary method leads to erroneous results.

3/3

1/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--USE OF HIGH MOLECULAR WEIGHT POLYMERIC ADDITIVES IN REDUCING  
PERMEABILITY OF GEOLOGICAL LAYERS -U-  
AUTHOR--(03)--MIRZADZHANZADE, A.KH.; MISCHEVICH, V.I., MAMEDOV, YU.G.  
COUNTRY OF INFO--USSR *M*  
SOURCE--NEFT. KHOZ. 1970, 48(1), 25-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--AQUEOUS SOLUTION, AMIDE, QUARTZ, PETROLEUM EXTRACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/1956 STEP NO--UR/0093/70/048/001/0025/0028  
CIRC ACCESSION NO--AP0133800  
UNCLASSIFIED



2/2 007

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FILTRATION OF AD. SOLNS. CONTG. SMALLER THAN OR EQUAL TO 0.3PERCENT POLYACRYLAMIDE (I) THROUGH COLUMNS FILLED WITH QUARTZ SAND GRADUALLY REDUCED THE FILTRATION RATE (R), AND R VARIED INVERSELY WITH THE CONC. OF I IN THE SOLNS. THE ADD. OF 20PERCENT CLAY TO SAND REDUCED R BY SIMILAR TO 50PERCENT; THE ADD. OF ONLY 0.3PERCENT I REDUCES R BY SMALLER THAN OR EQUAL TO 100PERCENT. I SOLNS. ARE RECOMMENDED FOR OIL WELL FLOODING.

UNCLASSIFIED

USSR

MIRZAHKMEDOV, M. A.

"Random Quantities in Hilbert Spaces over  $(R^\Delta, R^{\Delta'})$ "

Izv. AN UzSSR. Ser. Fiz.-Mat. N. [News of Academy of Sciences, UzSSR, Physics-Mathematical Sciences Series], 1973, No 2, pp 21-24 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V17)

Translation: Hilbert Space  $H$  over the pair of semifields  $(R^\Delta, R^{\Delta'})$  is defined. The scalar product in  $H$  is an element of semifield  $R^\Delta$ . These  $H$  spaces are more general than, for example, denumerable Hilbert spaces. The Gaussian random functions  $\xi(u)$  are studied in space  $H$  and a theorem is formulated on representation of the mean value and correlation function  $\xi(u)$ ; an explicit form of the characteristic functional of the limitlessly divisible distribution is presented; random linear processes with independent values are studied. Author's view

1/1

USSR

UDC 519.24

MIRZAKHMEDOV, M. A.

"On an Evaluation of the Spectral Function of a Homogeneous Random Field"

Tashkent, Sluchayn. protsessy i smezhn. vopr.--Sbornik (Random Processes and Related Problems -- Collection of Works), Part 2, 1971, "Fan", pp 63-66 (from Referativnyy Zhurnal -- Matematika, No 9, Sep 71, Abstract No 9V258, by M. Yadrenko)

Translation: Suppose  $\xi(t)$  is a homogeneous random field on an integral lattice in an  $s$ -dimensional Euclidean space having the spectral density  $f(\lambda)$ ,  $K_s = \{\lambda: -\pi < \lambda_i < \pi, i = 1, \dots, s\}$ . Suppose  $I_N(\lambda)$  is a periodogram constructed from observations  $\xi(t)$  on the cube  $\{t: 0 \leq t_i \leq N, i = 1, \dots, s\}$ . It is proven that for any bounded measurable function  $\phi(\lambda)$

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$$\lim_{N \rightarrow \infty} M \int_{K_s} \phi(\lambda) I_N(\lambda) d\lambda = \int_{K_s} \phi(\lambda) f(\lambda) d\lambda.$$

USSR

UDC: 519.21

SARYMSAKOV, T. A., MIRZAKHMEDOV, M. A.

"Stationary Processes on Topological Half-Fields and the Problem of Predicting Them"

Nauch. tr. Tashkent. un-t (Scientific Works, Tashkent University), 1970, vyp. 39<sup>4</sup>, pp 169-175 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V148)

[No abstract]

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- 19 -

USSR

UDC: 519.24

MIRZAKHMEDOV, M. A.

"Concerning an Estimate of the Spectral Function of a Homogeneous Random Field"

V sb. Sluchayn. protsessy i smezhn. vopr. Ch. 2 (Random Processes and Related Problems--collection of works. Part 2), Tashkent, "Fan", 1971, pp 63-66 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V258)

Translation: Let  $\xi(t)$  be a homogeneous random field on a whole-number lattice in  $s$ -dimensional Euclidean space having spectral density  $f(\lambda)$ ,  $K_s = \{\lambda: -\pi < \lambda_i < \pi, i=1, \dots, s\}$ . Let  $I_N(\lambda)$  be a periodogram plotted from observations  $\xi(t)$  on the cube  $\{t: 0 < t_i < N, i=1, \dots, s\}$ . It is proved that for any bounded measurable function  $\phi(\lambda)$ :

$$\lim_{N \rightarrow \infty} M \int_{K_s} \phi(\lambda) I_N(\lambda) d\lambda = \int_{K_s} \phi(\lambda) f(\lambda) d\lambda.$$

M. Yadrenko.

1/1

- 5 -

USSR

UDC 519.210

SARIYMSAKOV, T. A., Academician of the Academy of Sciences Uzbek SSR, and  
 MIRZAKHMEDOV, M. A., Tashkent State University imeni V. I. Lenin.

"Steady-State Processes on Hilbert Spaces Over Half-Fields"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 3, 1971, pp 529-530

Abstract: Let  $X$  be a Hilbert space over the half-field  $R^\Delta$ . The family of elements  $\xi_t$  of the space  $X$  depending on the parameter  $t \in R^\Delta$  is said to be a random process. The function  $R(t, s) = (\xi_t, \xi_s)$  with values in  $R^\Delta$  is said to be the correlation function of the random process. A random process is said to be steady-state if  $(\xi_t, \xi_s) = (\xi_{t+h}, \xi_{s+h})$  for any  $h \in R^\Delta$ . Consider  $\sum_u \alpha_u \xi_{t-u}$ , where  $\alpha_u, t \in R^\Delta$ . The aggregate of such sums and their limits in the sense of convergence in the norm is designated as  $H(\xi_t)$ .  $H(\xi_t)$  is said to be the space of values of the process  $\xi_t$ . It is proved that on the space  $H(\xi_t)$  there exists a family of unitary operators  $U_t^u$  such that

$$U_t^u \xi_s = \xi_{(t+s)_u}$$

for any  $t, s \in R^\Delta$ .

1/1

USSR

UDC 547.944

MIRZAMATOV, R. T., MALIKOV, V. M., LUTFULLIN, K. L., YUNUSOV, S. YU., Order of the Red Banner of Labor, Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences, Andizhan State Medical Institute imeni M. I. Kalinin

"Study of Physochlaina Dubia Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 4, 1972, pp 493-495

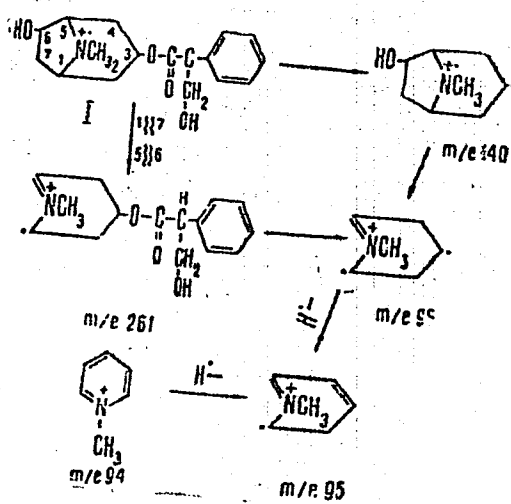
Abstract: Chloroform extraction was used to isolate 1.25% of the total alkaloids from the roots of Physochlaina dubia Pasch. (Ph. alatica E. Korot.) gathered in the flowering phase in the Fergan Oblast. By separating the mixture of bases by solubility in organic solvents, hyoscyamine and a new base I were obtained. The new base had a melting point of 61-62<sup>0</sup> (benzene),

$[\alpha]_D^{20}$  -- 13.5<sup>0</sup> (with 1.9 methanol), the bromohydrate with a melting point of 156-157<sup>0</sup> (acetone). The infrared, ultraviolet, nuclear magnetic resonance and mass spectral data and chemical properties of the base I indicate it has the structure of 6-oxyhyoscyamine

1/2

USSR\*

MIRZAHATOV, R. T., et al., Khimiya Prirodnikh Soyedineniy, No 4, 1972, pp 493-495



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1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
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DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV, A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a Laser Generating Several Axial Oscillations by the Photon Count Method"

Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an analysis is made of experiments to determine the radiation statistics of a high-threshold laser, and the results are given of the measurements of photon-count statistics of several lasers operating in one transverse and several axial modes. A block diagram of the apparatus used for the photon-counting, in which an He-Ne laser operating at a wavelength of 6328 Å is the radiation source, is given together with curves for the probability distribution of the photon counts for each type of oscillation. On the same axes for each of these curves, both the Poisson and negative binomial distribution curves are plotted for the sake of comparison and show close agreement. Results of the experiments demonstrate the effectiveness of the photon count for studying the

1/2

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USSR

UDC: 621.373.029.7.001.5

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972,  
pp 1622-1627

statistical characteristics of multiple frequency laser radiation.

2/2

USSR

UDC 548.316.2:669.295

SHISHMAKOV, A. S., ADAMESKU, R. A., and MIRZAYEV, D. A., Ural Polytechnic  
Institute imeni S. M. Kirov

"Packing Defects in Titanium  $\alpha$ -Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 442-443

Abstract: An x-ray study was made of the probability of deformation packing defects in titanium  $\alpha$ -alloys with aluminum and tin in which the sliding takes place according to different systems. The magnitude of the diffraction widening  $\beta_{hkil}$  due to packing defects, calculated from

$$\beta_{hkil} = B_{hkil} - \frac{b^2}{B_{hkil}}, \text{ where } B_{hkil} = \text{half width of the } \{hkil\} \text{ line}$$

and  $b$ =half width of the  $\{0002\}$  line, shows that the probabilities of deformation defects in titanium iodide and alloys with less than 1% Al and 2% Sn, are low. However, a further increase of the Al content up to 3.58% effects a sharp increase of the probability of deformation defects. The packing defect energy in the  $\{0001\}$  plane of Ti-1.86% Al, Ti-3.58% Al, and Ti-8.27%  
1/2

USSR

SHISHMAKOV, A. S., et al., Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 442-443

Sn-0.7% Al is considerably lower than the energy in alloys with smaller contents of alloying elements. Obviously, there exists a correlation between the probability of deformation packing defects and the deformation mechanism of hexagonal titanium alloys. One table, eleven bibliographic references.

2/2

- 24 -

USSR

UDC 669.15.24.782:669.112.227.34

SHEYNBERG, M. M., GOYKHENBERG, Yu. N., MIRZAYEV, D. A., and MOROZOV, O. P.,  
Chelyabinsk Polytechnical Institute

"Martensite Transformation in the Plastic Deformation of Fe-Ni-Si Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1200-1205

Abstract: Fe-Ni-Si alloys were melted in a 50-kg induction furnace, poured into 12.5-kg ingots, and forged into billets measuring 15 x 15 mm. The bars were homogenized for 10 hours at 100° C and then rolled into plates 1.5-2 mm thick from which samples measuring 60 x 5 x 1 mm were prepared. Chemical composition of alloy N28S was (in wt %): 28.1 Ni, 1.5 Si, 0.04 Mn, 0.07 Cr, 0.022 S, 0.012 P, balance Fe; composition of alloy N29S2 was: 29.3 Ni, 2.02 Si, 0.07 C, 0.13 Mn, 0.09 Cr, 0.02 S, 0.016 P, balance Fe. The martensite transformation temperature ( $M_s$ ) was +10 for N28S and -60 for N29S2. From a study of the martensite formation by plastic deformation it was established that martensite needles of the finest martensite plates are formed during cooling and do so in and along the grain boundaries. The needles, formed by plastic deformation, are most often situated parallel and intersect

1/2

USSR

SHEYNBERG, M. M., et al, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1200-1205

slip lines at small angles. The angle of disorientation in an austenite grain achieves a significantly large magnitude when plastic deformation is accompanied by the formation of martensite. This disorientation is much greater than when deformation is done above the  $M_d$  temperature.

2/2

- 75 -



USSR

UDC 620.181:669.1

SHTEYNBERG, M. M., MIRZANEV, D. A., and ZHURAVLEV, L. G., Chelyabinsk Poly-technic Institute

"Features of Martensite Transformation in Iron and Its Alloys"

Moscow, Metallovedeniye, No 9, Sep 72, pp 21-29

Abstract: This article is primarily a discussion of martensite transformation processes based on other literature sources. Particular attention is given to a comparison of steels Kh18N10T and 000Kh18N12. The greatest strengthening effect was observed for these two steels when they were deformed 25-30% at -100°C and then aged for one hour at 400-450°C. The steels then had the following mechanical properties:

	Kh18N10T	000Kh18N12
Yield strength, kgf/mm <sup>2</sup>	199	139
Tensile strength, kgf/mm <sup>2</sup>	200	140
Elongation, %	6	12
Reduction in area, %	38	69
Impact strength, kgf-m/cm <sup>2</sup>	1	5

After deforming 25-40% at -40 to -100°C, aging at 400-450°C, and brief heating somewhat above the A<sub>c</sub> temperature, they had the following properties:

1/2

USSR

SHTEYNBERG, M. M., et al., Metallovedeniye, No 9, Sep 72, pp 21-29

	000Kh18N12	Kh18N10T
Yield strength, kgf/mm <sup>2</sup>	70-87	62-75
Tensile strength, kgf/mm <sup>2</sup>	80-98	82-95
Elongation, %	25-30	25-30
Reduction in area, %	70-75	65-70
Impact strength, kgf/m/cm <sup>2</sup>	11-12	7

5 figures, 4 tables, 12 bibliographic references.

2/2

USSR

UDC: 681.3.06:51

PULATOV, I., MIRZAYEVA, D. T.

"Information Exchange Between Two 'M-20' Computers"

V sb. Vopr. kibernetiki (Problems of Cybernetics---collection of works),  
vyp. 43, Tashkent, 1971, pp 121-131 (from RZh-Matematika, No 11, Nov 71,  
Abstract No 11V842)

Translation: A system is proposed which provides group exchange of information between two "M-20" computers. The use of such a system in problem solving gives simultaneous access to the memories of both computers. Three methods are considered for data transfer from core store I to core store II and back: 1) series, 2) parallel-series, and 3) parallel. Codes are transmitted in all three cases from an RI transmitting machine. Detailed instructions are given on realization of the system with the necessary explanations. Two methods of synchronization are proposed for simultaneous operation of the two computers: command synchronization and sub-programming. The proposed system can provide an appreciable increase in speed when solving problems for which the core store volume of a single computer is inadequate. A. Khalamayzer.

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PULATOV, I., MIRZAYEVA, D. T.

"Information Exchange Between Two 'M-20' Computers"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works),  
vyp. 43, Tashkent, 1971, pp 121-131 (from RZh-Kibernetika, No 11, Nov 71,  
Abstract No 11V842)

Translation: A system is proposed which provides for group exchange of information between two M-20 computers. In solving problems with the use of such a system, the memory of both computers is simultaneously accessible. Three methods are considered for data transmission from the core store of computer I to that of computer II and back: 1) series; 2) series-parallel; 3) parallel. In all three cases, codes are transmitted from RI of the transmitting computer. Detailed instructions are given on realization of the system with necessary explanations. Two methods of synchronicization are proposed for implementing joint operation of the two computers: command synchronicization and subprogramming.synchronicization. The proposed system can increase speed appreciably in solving problems for which the core store volume of a single computer is insufficient. A. Khalamayzer.  
1/1