

USSR

UDC 533.916

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BEREZIN, A. K., FAYNBERG, Ya. B., SHAPIRO, V. D., BEREZINA, G. P., ZEYDLITS, V. P.

"Investigating Low-Frequency Instabilities in a Plasma-Beam Discharge by Correlation Analysis"

Kiev, Fizika plasmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 129-133

Abstract: A method is described for determining the degree of stochasticity of the oscillations excited in a plasma-beam discharge. The method is based on measurements of the oscillation space-time correlation functions, the latter having the form $R(\underline{l}, \tau) = \overline{E_z(z, t) E_z(z + \underline{l}, t + \tau)}$, where E_z is the intensity of the high-frequency electric field and the horizontal line above the expression indicates averaging over z and t . The authors also describe experiments they performed to determine the degree of

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BEREZIN, A. K. et al, Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 129-133

stochasticity of the excited oscillations by investigating the shape of the oscillations with movable antenna loops along the beam close to the glass chamber containing the plasma and oriented to the H_z component of the field. The autocorrelation functions, frequency spectra, and wave number spectra were obtained for the envelope and the low-frequency oscillations excited in the plasma beam discharge. A block diagram of the experimental apparatus is given.

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Magnetohydrodynamics

USSR

BEREZINA, G. P., BEREZIN, A. K., and ZEYDLITS, V. P., Physico-Technical
Institute of the Academy of Sciences Ukrainian SSR

"Experimental Investigation of the Stochastic Acceleration of Ions in an
Intense Plasma-Beam Discharge"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14,
No 2, 20 Jul 71, pp 77-80

Abstract: Two modes of excitation of low-frequency oscillations can be distinguished in a pulsed plasma-beam discharge. The first mode at relatively low pressures is characterized by an excitation of ion-sonic oscillations which after 30-40 microseconds convert into oscillations which belong to the second mode. Included in this mode also are the oscillations generated during the entire duration of the current pulse at a higher gas pressure in the system. This article is concerned with the results of investigating the stochastic acceleration of ions during the excitation of low-frequency oscillations in the second mode. The authors describes the experiment and results and give two figures to support and illustrate their position. Figure 1 shows the function of mutual correlation of oscillations excited by azimuth; and Figure 2 shows one of the oscillations excited in the second mode ,
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BEREZINA, G. P., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 2, 20 Jul 71, pp 77-80

the frequency spectrum, the spectral density of the energy of these oscillations, the time variation in the phase of the investigated oscillations, and the energy spectrum of the ions generated by exciting low-frequency oscillations under the conditions of the second mode . The authors discuss the study of low-frequency oscillations and mechanisms for the transport of energy from the electron beam to the plasma ions in the second mode of the intense plasma-beam discharge. The article contains 2 figures and 4 bibliographic entries.

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USSR

UDC 621.791.89

BEREZINA, N. V., SAENKO, M. I., ISHCHENKO, A. Ya., KUDINOV, V. M.

"Strengthening of Welded Joints in Aluminum Alloys by Explosive Processing"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 73, p 71.

Abstract: The influence of explosive processing was tested on joints of sheets 3 mm thick of AMg6N alloy with 40% cold working. The strength and yield point increased by 10-15 and 10-25% respectively. The impact toughness and bending angle was slightly lower, but significantly higher than the corresponding values for the base metal. When flat explosive charges are used with weights an order of magnitude greater than the weights of elongated charges such as plastic explosives, the yield point increases by 35-40%, but specimens are significantly deformed.

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USSR

UDC 539.389.2:669.15

BEREZINA, N. V., DONUKIS, T. L., KUDINOV, V. M., TITOV, P. V., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Structural Changes in Steel Kh18N9T During Explosive Welding"

Kiev, Metallofizika, No 40, 1972, pp 49-53

Abstract: An investigation was made of the weld seam of a steel Kh18N9T-copper bimetal, produced by explosive welding with contact rates of 2.7 and 3.9 km/sec. Strengthening of the steel to a depth of 0.5 mm was detected in the seam zone, and the rolling texture disappears in this same layer. At the rate of 3.9 km/sec, 30% alpha-martensite formed in the steel in the seam zone. As x-ray diffraction analysis showed, the width of the interference lines of the alpha-martensite were small and considerably less than for the martensite obtained during cold working. This suggests that the martensite is found in a weakened condition apparently as the result of heat liberation. 3 figures, 1 table, 5 bibliographic references.

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USSR

UDC 576.858.095.383:576.312.31

BEREZINA, O. N., SKLYANSKAYA, Ye. I., SEMENOVA, N. P., and PETERSON, O. P.,
Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences,
Moscow

"Changes in the Matrix Activity of Chromatin in Response to Viral Infection"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 397-402

Abstract: The matrix activity of DNP preparations was determined in the RNA-polymerase system in vitro. The tests were performed on 10-day old chick embryos infected with 3×10^3 ID₅₀ of A/WSN influenza virus and with 3×10^7 ID₅₀ of vaccinia virus. Control tests showed that the presence of DNA matrixes, magnesium ions, and ribonucleoside triphosphates was required for RNA synthesis. The DNP matrix activity decreased to 60% of the control level early in the course of infection with either pathogen. The development of the infection was accompanied by inhibition of the euchromatin complex in the cell genome and stimulation of the heterochromatin complex. Inhibition coincided with a decrease in the concentration of RNA and of residual proteins in the DNP preparations, while an increase in the concentration of these components coincided with stimulation of matrix activity.

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USSR

UDC 576.858.43

BEREZINA, O. N., SKLYANSKAYA, Ye. I., KOZLOVA, I. A., PETERSON, O. P., and ZHDANOV, V. M., Academician, Academy of Medical Sciences USSR

"Electrophoretic Separation of the Principal Proteins from Cells Infected with Different Viruses"

Moscow, Doklady AN SSSR, Vol 190, No 5, 1970, pp 1225-1228

Abstract: Changes in the synthesis of total histones and their fractions in nuclei of infected cells and in desoxyribonucleic acid complex were studied. The dynamics of accumulation and of changes in principal cytoplasm protein was studied also. One hour after infection the number of protein bands increases, most with moderate electrophoretic mobility. After 3 hrs, additional slow-moving bands appear, and this increase continues for 5 hrs. After 7 hrs, the protein bands begin to disappear, but various minor bands appear. Analogous results were observed 24 hrs after infection with pox vaccine, some increase with influenza virus, and no change in protein bands with Herpes virus. After 48 hrs, no increase in the protein bands was noted. The results obtained correspond to the dynamics of accumulation of viruses in chick embryo tissue. Four histone fractions were isolated from infected tissues: lysine-rich histones - f_1 , relatively lysine-rich fractions f_{2a} and f_{2b} , and a fraction rich in arginine - f_3 . Electrophoretic analysis of individual fractions showed that a continuous disappearance of lysine-rich fractions

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BEREZINA, O. N., et al., Doklady AN SSSR, Vol 190, No 5, 1970, pp 1225-1228

(f_1) occurs in cells infected with the pox virus and influenza vaccine, while in fractions f_{2a} and f_{2b} , additional principal and minor bands appear. The arginine-rich fraction in the infected material does not differ from that in controls.

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ELECTROPHORETIC SEPARATION OF BASIC PROTEINS OF CELLS INFECTED WITH
DIFFERENT VIRUSES -U-
AUTHOR-(05)-DEREZINA, O.N., SKLYANSKAYA, YE.I., KOZLOVA, I.A., PETERSON,
O.P., ZHDANOV, V.M. **B**
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1225-8 VIROL
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROPHORESIS, SMALLPOX, VACCINE, INFLUENZA VIRUS, HERPES
SIMPLEX VIRUS, TISSUE CULTURE, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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STEP NO--UR/0020/70/190/005/1225/1228

CIRC ACCESSION NO--AT0122790

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0122790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROPHORESIS IN POLYACRYLAMIDE GEL WAS USED TO FRACTIONATE CHICK FIBROBLAST CULTURES GROWN ON MATRICES WITH ADDN. OF BULL SERA OR ON TISSUES FROM 11 DAY CHICK EMBRYOS. THE INFECTION WAS INTRODUCED INTO ALLANTOIDAL SPACE AND EMPLOYED THE VIRUS MATERIAL OF SMALLPOX VACCINE, INFLUENZA, OR HERPES. THE TYPICAL ELECTROPHOREGRAMS WERE SHOWN FOR THE TREATED CULTURES; THE CHANGES IN THE ACCUMULATION OF BASIC PROTEINS VARY WITH DURATION OF THE EXPT. WITHIN 1 HR OF INFECTION TO NO. OF SEPD. PROTEINS INCREASES MAINLY IN THE GROUP OF MEDIUM ELECTROPHORETIC MOBILITY; WITHIN 3 HR, PROTEINS WITH SLOW MOBILITY APPEAR AND BY 5 HR THE BASIC PROTEIN FRACTIONS EXCEED THOSE OF THE CONTROLS BY A FACTOR OF 4 OR MORE; BY 709 HR THE NO. OF DISTINCT PROTEIN ZONES DECLINES, BUT MINOR ZONES APPEAR AT THE SAME TIME. THE INCREASED TOTAL AMOUNT OF BASIC PROTEINS IS CAUSED BY INCREASED FRACTIONS OF HISTONES WITH MODERATE LEVELS OF LYSINE; IT IS PROBABLY THIS PROTEIN FRACTION THAT IS CONNECTED WITH THE INHIBITING ACTIVITY OF BASIC CYTOPLASM PROTEINS.

UNCLASSIFIED

BEREZINA, S. P.

JPRS 55701

13 April 1972

UDC: 535.2:621.375.826:591.484

THE EFFECT OF LASER BEAMS ON THE TUNICS OF THE EYE

[Article by S.P. Berezina at the recommendation of the Laboratory of Space Biology, Moscow State University named M.V. Lomonosov; Moscow, Biologicheskoye Nauch. Russian, No 11, 1971, signed to press 4 November 1971, submitted 7 October 1970, pp 46-49]

Experimental data are submitted on the nature of the effect of ruby and neodymium lasers on the tunics of the eye. Information is given on transmissibility of different eye tissues. The results of these experiments are important to gain understanding of extensiveness of lesions within the eye.

Ophthalmology was the first area of medicine in which lasers were used. This is due to the specific properties of laser beams. Because of the intensity of laser radiation a thermal effect can be obtained in the eye with a very brief discharge amounting to milliseconds. The nondivergence of the laser beam makes it possible to focus it on a small spot. In addition, its monochromatic radiation diminishes the chromatic aberration effect when the beam passes through the optical system of the eye.

At the present time laser photocoagulation is used for detachment of the retina when its peripheral and inaccessible regions are involved. The proper choice of radiation energy is an extremely important prerequisite for successful surgery in the case of detachment of the retina. An overdose could induce hemorrhage, intensify detachment, and other complications. There are quite a few works dealing with treatment of retinal detachment [1, 8, 9]. In diabetes, vascular disturbances in the eyes could lead to hemorrhages, retinal injury and detachment. In this case, photocoagulation is used to form thrombi in the vessels and prevent possible hemorrhages. Laser photocoagulation is used extensively to break down benign and malignant tumors of the retina, vascular tunic, and iris [5]. It is proposed to perform laser iridectomy for glaucoma. The possibility of laser iridectomy was investigated under laboratory conditions on rabbits, monkeys, and cats; a ruby laser was used. L.A. Linnik and L.A. Vedzedenko [2] obtained data dealing with the possibility of using laser radiation to form an artificial pupil in experiments involving irradiation of the rabbit's iris with a focused ruby laser beam with an energy of 0.3 to 2.29 joules.

[1 - USSR - C]

USSR

UDC 615.849.19:061.3

OGNEV, B. V., Corresponding Member of the Academy of Medical Science, USSR,
TROITSKIY, R. A., Doctor of Medical Science, and ~~BEREZINA, S. P.~~ (Moscow)

"Symposia on the Problems of Application of Lasers in Medicine and Biology"

Moscow, Khirurgiya, No 12, 1971, pp 118-119

Translation: At the present time, we have been given the possibility of employing and developing a promising achievement of quantum physics -- optical quantum generators (lasers). Besides the medical aspect, the laser is also important because the construction of lasers was first accomplished by the Soviet physicists N. G. Basov and A. M. Prokhorov, who were awarded the Lenin Prize in 1959 for their work. Later, in 1964, they were awarded the Nobel prize for work in this field along with the American scientist Towns (Tauns). The most important properties of lasers, high coherence, monochromaticity of radiation, immense energy density, and the possibility of focusing, have attracted the attention of specialists in various scientific fields. In spite of a comparatively short period since the creation of lasers, several experiments have been run on their use of biology and medicine. As a result, we have succeeded in obtaining many valuable and encouraging results not only under experimental conditions, but also in actual therapy.

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

Results of medical and biological studies with lasers are presented in over 800 published works. Symposia, which took place in May 1971 in Kiev (All Union) and in Leningrad, were dedicated to this important new field. Short abstracts of the proceedings are presented in this article. Physicians, biologists and engineers shared in the work of these symposia. A study of the use of lasers in biology conducted at the Kiev Institute of Oncology, deserves attention. Specifically, the report of N. F. Gamaley, et al., showed that irradiation with ultraviolet laser microwaves provided valuable data on the metabolism not only of normal cells, but also cells treated with various stains, antibiotics and vitamins. The same authors, using local exposure of the mitochondria of cardiac muscle cells in rats, succeeded in accelerating, retarding and even halting the reduction of cells. We may hope that the results of expanded, intensive supplemental studies will help the study of the metabolism of living cells and will in the future be used by clinicians.

Another important aspect of the biological significance of the problem, as described by V. M. Inyushin et al., in their report, is the ability of laser

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

radiation to cause a shift in the energy state of the cell, which leads to the stimulation of the redox process and which, in the final analysis, will make possible acceleration or inhibition of cell growth. We may assume that it will prove possible to control processes in living organisms by means of laser rays. At this time this would apply only to the very simplest structures; microbes, plant cells, etc. The data cited by the authors, shows the importance of laser applications in genetics; which, in principle, could provide regulation and control of cellular processes.

Furthermore, the first and most successful application of lasers in medicine was in ophthalmology at the institute imeni F. P. Filatov. The reason for this was, on one hand, because the transparent medium of the eye is permeable to the passage of the laser ray. However, on the other hand, it is difficult to imagine any other organ consisting of tissues with a higher range of contrast. For this reason, after many experimental studies by oculists, they were able to determine guidelines for the application of lasers in clinical (therapeutic) conditions, treating retinal detachment, ocular neoplasms, and even to experimentally approach the creation of an artificial pupil, all of which will be significant in therapeutic application (the results of work in 3/8

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

this area were presented in the report of L. A. Vedmedenko, L. A. Linnik, G. G. Melikov, N. A. Puchkovskaya, L. S. Terent'yeva).

The application of lasers in oncology is of special interest. In the reports of V. V. Gorodilova, I. G. Lagunova, I. R. Kazarev, V. Ye. Likhtenshteyn, R. Ye. Kavetskiy, B. V. Ognev, S. D. Pletnev, et al., it was shown that pulsed and continuous laser rays were able to coagulate malignant tumors in humans and animals. In particular, encouraging results were obtained from the irradiation of experimentally-produced Harding-Passy tumors, the carcinoma RSM [Rous Sarcoma in mice], Brown-Pearce tumors, and also melanoma, skin cancers, angiomas, fibromas and nevuses in man. It was established that the tumor and its metastasis must be fully irradiated, and that pigmented tumors show greater sensitivity to lasers than unpigmented tumors. This clarifies and provides a scientific basis for the initial results in erasing a tattoo, as obtained by A. A. Vishnevskiy (the younger) of the Institute of Surgery imeni A. V. Vishnevskiy. The valuable properties of laser therapy, in comparison to other methods of treating surface tumors, are the speed and painless nature of irradiation. It is usually conducted in one sitting,

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

without anesthesia, there is an absence of side effects and rapid healing of the irradiated site, usually not accompanied by infection (R. Ye. Kavetskiy).

The reports of B. V. Ognev, et al., and R. A. Troitskiy, A. K. Polonskiy, B. M. Khromov were devoted to the application of the continuous action laser rays as a "light scalpel." Surgery without hemorrhage, such as dissection and resection of the kidney, liver, intestine and amputation of limbs, is possible using the coagulating property of laser rays. This is extremely important. When B. M. Khromov, et al., compared operations performed with a scalpel, by thermocautery and with laser rays, it was found that the surgical incisions from the rays are replaced by connective tissue. The scar forms in 3-4 weeks depending on the organ and the nature of the tissue. At the same time, in analogous operations performed with a scalpel and using thermocautery, much slower regeneration was observed. The scar from the operation with a scalpel is more tender than that from the laser.

A most promising application of laser rays will be in neurosurgery, where bloodless operations have future importance. Even today R. A. Troitskoy and A. K. Polonskiy have succeeded in stopping rather extensive hemorrhage of

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

large vessels of rabbits with defocused laser rays. In addition, it was shown that surgery using lasers takes considerably longer than scalpel operations. This is explained by the still inadequate laser equipment. In connection with this problem, great interest was given to the report of the Engineering Academy, by N. D. Devyatkov, V. P. Belyayev, I. V. Kudravtsev, et al., which discussed the prospects of creating new lasers for surgical work.

Another series of reports described the characteristic effect of lasers on different organs and tissues. It was established that the destructive effect of laser radiation is determined by the biological make-up of the irradiated objects (B. V. Ognev, et al., and B. M. Koromov, et al). The characteristics of the effect of lasers on laryngeal cartilage, (A. Ye. Lapko), tooth pulp (E. Ye. Tarsis, et al.), liver (V. G. Pinchuk, et al.), spine and spinal cortex (A. A. Vishnevskiy, et al.) intestinal walls and lymph nodes (R. A. Troitskiy, A. K. Polonskiy), and skin (V. V. Byalik, et al.) were determined.

The reports of D. D. Kopytniy, L. Ya. Zazulevskiy provided experimental confirmation of the stimulation of phagocytosis by local laser irradiation.

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P. P. Chekurov showed the stimulating effect of laser radiation on regeneration of bone tissue. They also succeeded in adapting lasers in clinics for treatment of polyarthrititis, radiculitis and endarteritis obliterans.

Of utmost importance to future development of medical and biological research is the problem of reliable protection of healthy body parts -- especially the eyes of the researcher. Principles of organization are being developed for laser laboratories, as well as for laser operations, clothing, and safety glasses. The results obtained to date cannot be considered satisfactory. This is especially true since great importance is attached to the effect of reflected laser rays (report of B. P. Korichinskiy, I. R. Lazarev, et al.).

Experiments have shown dystrophic effects in the 17th sector of the cortex and other sections of the brains of rabbits and guinea pigs, after laser irradiation of their eyes. This confirms the importance and complexity of the problem of protection from laser radiation, both direct and reflected (A. A. Vishnevskiy, R. A. Troitskiy, N. I. Timokhina). In this respect, therefore, it is necessary to examine the rapid development of laser technology. Already, new devices have been developed, such as liquid lasers, which, undoubtedly, will be used

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OGNEV, B. V., et al., Khirurgiya, No 12, 1971, pp 118-119

in biology and medicine since they combine the merits of solid and gas lasers.

It must, however, be stressed that for medical and biological studies, there are few good lasers in spite of the great importance attached to work in this field. Questions on focusing, depth of penetration of light in living tissue and absorption of laser radiation remain undecided. For this reason, the members of the symposia concluded that medical and biological studies with lasers must be conducted in cooperation with engineers working in this field. In conclusion, we should note the fine organization of the symposia in Kiev and in Leningrad.

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USSR

UDC 615.214.32

BABICHEV, V. A., UTESHEV, B. S., KUDRYASHOV, V. M., BEREZINA, T. A.,
Department of Pharmacology, II Moscow Medicinal Institute imeni N. I.
Pirogova

"Immunodepressive Action of Cytosine Arabinoside"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 473-476

Abstract: The effect of the antimetabolite cytosine arabinoside (CA) on sheep erythrocyte stimulated primary immunological response in normal mice and in the system of syngenic transmission in lethally irradiated animals with a parallel study of the antibody producing cells and cell precursors was investigated. SVA mice (18-20 gm) were injected intravenously with 5% sheep erythrocytes (5×10^8 cells), sacrificed after 4 days, the spleens isolated and the primary antibody (AB) forming cells determined by the method of Jerne and Nordin. CA, upon injection (500 mgm/kg) 48 hours after immunization, produced a maximum immunodepressive effect (16 AB-producing cells per 10^6 nucleated spleen cells versus 203 AB-producing cells in the control -- no injection). CA injected 24 hours after or 24 hours before immunization, reduced AB-producing cells to 89 and 126 cells per 10^6 nucleated spleen cells. Injection of CA (100 mgm/kg) at 24, 48, and 72

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BABICHEV, V. A., et al., Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 473-476

hours after immunization prevented almost completely AB-producing cells (4 AB-producing cells per 10^6 spleen cells). Spleen cells from the rats injected at 24, 48, and 72 hours with CA were injected into recipient rats and the effect of CA on the population of precursor cells of the primary immunological response was studied. Recipients demonstrated 6 hemolytic foci (corresponding to 1 precursor cell) compared with controls which contained 20 hemolytic foci. The number of plaque-forming cells in experimental recipients in the whole spleen was about 128, those in the control about 516. It was concluded that experimental and control animals' proliferative possibilities of U-cells are realized in the organs of lethally irradiated recipients to the same degree. Whether CA elicits the lowering of proliferative possibilities of all nucleus containing cells or only that of precursor cells is the subject of further studies.

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BEREZINA, T.A.

THE USE OF PATENT DOCUMENTATION IN MEDIAN-TERM TECHNOLOGICAL FORECASTING

UDC 608.002.6:167.2.62.001.6

JPRS 59821
16 August 1973

CAROL -

SHARAN -
Note previous

Article by V. A. Dubrov, Deputy Director of TsNIIPI [Central Scientific Research Institute of Patent Information and Technical and Economic Research (of the State Committee for Inventions and Discoveries, USSR)] for Scientific Work, I. N. Dzhuravskiy, Laboratory Manager of the Technical-Economic Research Section of TsNIIPI, and T. A. Berezina, Senior Scientific Worker of TsNIIPI; Moscow, Doprosy [Interpretations], No 8, 1970, pp 9-15]

Determination of the contemporary technological level and compilation of scientifically grounded forecasts of development of technology in the future with the aim of choosing the most rational directions of technological progress and proper formation of technological policy are possible only with a systematic study and careful analysis of sources of technological-economic information.

Among the important sources of information being used in technological forecasting is patent documentation, which contains information of a perspective nature.

Taking into account that technological forecasting largely is determined by branch characteristics, and often also by the peculiarities of narrow topical directions, the given article examines general criteria for selection and analysis of documents at individual stages of forecasting, focusing main attention on the place and role therein of patent documentation.

Technological forecasting is taken to mean scientifically grounded prediction of a change in socially necessary indicators of objects of technology in the future.

Technological forecasting is connected in the closest way with branch planning. It is a component of formation of technological policy. Forecasts do not decide all tasks arising in planning, nor do they substitute for plans, but they are a necessary preparatory stage, the results of which must be considered in the compilation of such plans. While a plan establishes what must be done and at what expense, a forecast determines what can be done and under what conditions.

Socially necessary indicators are an aggregate of technological-economic and exploitation characteristics meeting concrete needs under specific conditions of exploitation of an object of technology.

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[II - USSR]

USSR

UDC 616.832.9-002.931.611.3-092.9

AVTSYN, A. P., ~~BEREZINA, Ye. K.~~, KENIG, E. E., DURSUNOVA, S. M., BELOVA, Ye. M., SHTEGEL'MAN, and ZHUKOV, V. G., Scientific Research Institute of Human Morphology, Academy of Medical Sciences USSR, and All-Union Scientific Research Institute of Antibiotics

"An Experimental Model of Leishmanial Meningoencephalitis"

Moscow, Antibiotiki, No 10, 1971, pp 885-888

Abstract: Intercerebral inoculation of mice with Leishmania donovani, strain T-1, obtained from dogs, and other strains obtained from reptiles resulted in the typical clinical picture of meningoencephalitis. The reaction to Leishmania and to the trauma was evident at the injection site in 14 days and 40 days later there were signs of inflammation of the meninges. The process became generalized in the central nervous system after 160 days. Lymphoid infiltrates appeared in the pia mater and small granulomas in the brain tissue proper. Within the lymphoid infiltrates and granulomas, Leishmania were observed. The granulomas consisted mainly of epithelioid cells. Actual penetration of Leishmania into nerve cells could not be conclusively demonstrated. The ease with which meningoencephalitis can be induced in mice with Leishmania makes these animals suitable for use in experimental chemotherapy.

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Acc. Nr:

A/0034407

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, ^(B)1970, Vol 15, Nr 2, pp 112-116

COMBINED USE OF SEMI-SYNTHETIC PENICILLINS IN EXPERIMENTS

Petrova, M. A.; Berezina, Ye. K.; Chavdarova, V. B.;
Navashin, S. M.

National Institute for Antibiotics, Moscow

The efficacy of ampicillin combination with oxacillin was estimated on a model of mixed infection caused by intravenous injection of B. coli and intranasal administration of Staph. ablus.

D.n.

REEL/FRAME

19711067

USSR

UDC 621.791.14:51.001.57

VOINOV, V. P.; KANEL', L. S., BEREZINA, Ye. N., and
GORDIYENKO, N. I., State Scientific Research Institute of
Automobile Transportation

"Use of the Mathematical Programming Method for the Evaluation
of the Results of Friction Welding"

Kiev, Avtomaticheskaya Svarka, No 4 (241), Apr 73, pp 19-21

Abstract: The method of mathematical programming, in which the matrix represents a total factorial experiment of 2^n -type, was used to evaluate results of friction welding. From suggested regression functions, the joint influence of principal factors of the process can be evaluated in a wide range of their variation in the friction welding of specimens (16 mm in diam.) from joined steels 20 and 40 Kh and from steel 20; also, optimum parameters of the welding method and maximum values of the impact ductility can be determined for working at normal and low temperatures. To increase the resistivity to brittle failure, a stepped cycle of pressure (heating pressure/peening pressure=5/10) at optimum heating time ($t=3$ sec) and rotation velocity ($n=1200$ rpm) must be applied. The impact strength of welded specimens of steel 20 showed satisfactory agreement with calculations from regression functions. Three figures, five formulas, two bibliographic references.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE PHOTOELASTIC CONSTANTS OF OPTICAL GLASS -U-

AUTHOR--BEREZINA, YE.YE.

COUNTRY OF INFO--USSR *B*

SOURCE--LENINGRAD, OPTIKO-MEKHANICHESKAYA PROMYSHLENNOST', NO 2, FEB 70,
PP 38-39

DATE PUBLISHED----FEB 70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--OPTIC GLASS, PHOTOELASTICITY, OPTIC MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1580

STEP NO--UR/0237/70/000/002/0038/0039

CIRC ACCESSION NO--AP0118563

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118563

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A BRIEF DESCRIPTION IS GIVEN OF THE TECHNIQUE AND RESULTS OF MEASUREMENTS OF THE PHOTOELASTIC CONSTANTS OF 60 GRADES OF OPTICAL GLASS.

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USSR

UDC: 681.3:16

TOKHODZILO, P. V., KOLOMOYSKAYA, I. N., BEREZINETS, L. P.

"Cybernetics and Computer Equipment in the Ukraine. Bibliographic Guide"

Kibernetika I Vychislitel'naya Tekhnika Na Ukraine. Bibliogr. Ukazatel' [English version above], Kiev, Nauk. Dumka Press, 1970 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 3, 1971, Abstract No 3 B24 K).

Translation: The index is published in six parts: part 1, theoretical cybernetics and computer methods, 261 pp; part 2, engineering cybernetics, 220 pp; part 3, mathematical modeling and specialized computer equipment, 178 pp; part 4, computer equipment, 179 pp; part 5, economic cybernetics and systems engineering, 201 pages; part 6, biological and medical cybernetics, botany, 114 pp.

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1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--PRODUCTION OF SEMI KILLED STEEL -U-
AUTHOR--(03)-PONER, D.M., BEREZINETS, V.YA., KORNEYEV, N.D.
COUNTRY OF INFO--USSR *B*
SOURCE--METALLURG. JAN. 1970, (1), 19-20
DATE PUBLISHED----JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--KILLED STEEL, STEEL PRODUCTION, STEEL DEOXIDATION,
FERROSILICON, ALUMINUM, STEEL SHEET, IMPACT STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1943 STEP NO--UR/0130/70/000/001/0019/0020

CIRC ACCLSSION NO--AP0108272
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVEMENTS TO THE PRODUCTION OF SEMI KILLED STEEL ARE DESCRIBED. STEEL FOR USE AS THICK SHEET IS DEOXIDIZED WITH AL POWDER; OTHER TYPES ARE TREATED WITH FERRO-SI IN THE LADLE. THE MECHANICAL PROPERTIES OF THIS MATERIAL SATISFY STATE STANDARDS EXCEPT FOR CASES INVOLVING A VERY HIGH IMPACT STRENGTH AT LOW TEMP. AFTER MECHANICAL AGEING. THE USE OF SEMI KILLED INSTEAD OF KILLED STEEL IMPROVES THE PRODUCTIVITY OF THICK SHEET.

UNCLASSIFIED

USSR

UDC 621.33.21:627.83

BEREZINSKIY, S. A., SHNIP, S. D.

"Calculation of the Above Water Part of the Combined Hydroelectric Power Plant Building for Thermal Effects"

Tr. Vses. proyektno-izyskat. i NII Hidroproyekt (Works of the Hidroproyekt All-Union Planning, Surveying and Scientific Research Institute), 1970, collection 19, pp 297-307 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 D80)

Translation: A study was made of the stressed state of the Plyavinyas GES [Hydroelectric Power Plant] spillway, which has arisen under the effect of axial thermal deformations. Analysis of the calculation results confirmed the expediency of lengthwise construction of the GES building where it is possible to reduce the containment of the thermal deformations as much as possible. There are 6 illustrations and a 2-entry bibliography.

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1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INVERSE COMPTON EFFECT, PAIR PRODUCTION, AND PENETRATION OF HIGH
ELECTRONS AND PHOTONS THROUGH THE METAGALAXY -U-
AUTHOR--BEREZINSKIY, V.S.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(2), 399-410
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES
TOPIC TAGS--COMPTON EFFECT, PAIR PRODUCTION, HIGH ENERGY PARTICLE,
ELECTRON RADIATION, GAMMA RAY ABSORPTION, ELECTROMAGNETIC INTERACTION,
SPACE RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1991/1304 STEP NO--UR/0367/70/011/002/0399/0410
CIRC ACCESSION NO--AP0110724
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110724

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

ABSTRACT. GENERAL FORMULAS ARE OBTAINED FOR ENERGY LOSSES OF e OWING TO THE INVERSE COMPTON EFFECT AND FOR THE PROBABILITY OF PAIR PRODUCTION BY PHOTONS BY USING ELECTROMAGNETIC RADIATIONS OF AN ARBITRARY SPECTRUM. INTERACTION OF e AND PHOTONS OF HIGH AND ULTRAHIGH ENERGIES WITH RELIC RADIATION AND WITH RADIO FREQUENCY RADIATIONS IN CONSIDERED AS WELL AS WITH MAGNETIC FIELDS IN METAGALACTIC SPACE. AT THE PRESENT TIME THE UNIVERSE IS NOT TRANSPARENT TO e WITH ENERGIES e GREATER THAN OR EQUAL TO 10 PRIME8 EV OR TO PHOTONS WITH ENERGIES e GREATER THAN OR EQUAL TO 10 PRIME11 EV.

FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NU--AT0144433

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE DIFFICULTIES
FACED BY THEORIES ASSUMING ALL OBSERVED COSMIC RAYS TO BE OF
METAGALACTIC ORIGIN. IT IS SHOWN THAT OBSERVED COSMIC RAYS AT ENERGIES
APPROACHING OR EXCEEDING 3 TIMES 10 TO THE 18TH POWER EV CANNOT BE
METAGALACTIC PROTONS. THE NEUTRINO HYPOTHESIS IS REVIEWED.
FACILITY: AKADEMIIA NAUK SSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--COSMIC NEUTRINDS OF SUPERHIGH ENERGY -U-
AUTHOR-(02)-BEREZINSKIY, V.S., ZATSPIN, G.T. *B*
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(1), 200-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT
TOPIC TAGS--COSMIC RAY MEASUREMENT, NEUTRINO, COSMIC RAY SHOWER, ENERGY
SPECTRUM, HIGH ENERGY PARTICLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1980/0183 STEP NO--UR/0367/70/011/001/0200/0205
CIRC ACCESSION NO--AP0048475
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0048475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRUM IS CALCD. OF PRIMARY COSMIC NEUTRINOS PRODUCED IN COLLISIONS OF P WITH RELIC PHOTONS. BY ASSUMING A LINEAR INCREASE OF THE NEUTRINO N CROSS SECTION WITH THE NEUTRINO ENERGY UP TO THE GEOMETRICAL N CROSS SECTION (SIMILAR TO 3 TIMES 10 PRIME NEGATIVE 16 CM PRIME 2) THE COSMIC RAY SPECTRUM MEASURED FROM EXTENSIVE AIR SHOWERS MAY WELL HAVE NO CUT OFF IN THE ENERGY REGION E LARGER THAN OR SIMILAR TO 3 TIMES 10 PRIME 19 EV. FACILITY: FIX. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.373:623.543

BEREZKIN, A. N., DUNAYEV, YU. A., KAMACH, YU. E., KOZLOVSKIY, YE. N., and OVCHINNIKOV, V. M., Physical Engineering Institute imeni A. F. Ioffe

"Use of Monopulse Optical Laser for Photographing Models During Ballistic Investigations"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kine-matografii, Vol 15, No 1, Jan-Feb 70, pp 21-25

Translation: The article investigates the possibilities of application of optical lasers for the illumination of moving objects in shadow photography. A diagram of the experimental apparatus is presented and a description is made of the optical laser, telescopic system which forms the illumination beam for the moving object, and a system of synchronization of illumination pulse with the moment of arrival of the investigated object at a given point in the field of photograph taking. The presented photographs clearly show the boundries of flying solids, shock waves, and discontinuities in solid's track. The article shows the possibility of application of a monopulse ruby laser as a source of illumination in the photography of moving objects during aeroballistic investigations.

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Acc. Nr:

AP0046225

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0077

A70-23173 # Use of a monopulse laser for photographing models in ballistic studies (Ispol'zovanie monoimpul'snogo opticheskogo kvantovogo generatora dlia fotografirovaniia modelei pri ballisticheskikh issledovaniiaxh). A. N. Berezkin, Ju. A. Dunayev, Iu. E. Karnach, E. N. Kozlovskii, and V. M. Ovchinnikov (Akademiia Nauk SSSR, Fiziko-Tekhnicheskii Institut, Leningrad, USSR). Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii, vol. 15, Jan.-Feb. 1970, p. 21-25. In Russian.

Study of the possibilities of employing lasers to illuminate moving objects during shadow photography. Diagrams of the experimental arrangement are presented, and a description is given of the laser employed in the experiment, the telescopic system used to shape the beam illuminating the moving body, and the system for synchronizing the illumination pulse with the moment of arrival of the object under investigation at a given point in the photography field. Photographs are presented in which the boundaries of the flying bodies, the shock waves, and inhomogeneities in the wake of a body can be clearly seen. The possibility of using a monopulse ruby laser as an illumination source when photographing moving models in aeroballistic studies is demonstrated.

A.B.K.

REEL/FRA
19781341

ACS

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USSR

UDC: 681.325.61

BEREZKIN, B. S.

~~"A Method of Isolating the Average Sampling Signal From Signals of Identical Sources"~~

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285354, class 42, filed 3 Jul 69, published 29 Oct 70, p 122

Translation: This Author's Certificate introduces a method of isolating the average sampling signal from signals of identical sources (e. g., three sources) by comparing combinations of two signals in each. As a distinguishing feature of the patent, the equipment for implementing the method is simplified by forming a sequence of extremum signals selected from all combinations, differentiating them, and fixing the extremum signal which corresponds to a change in polarity of the differentiated pulses.

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USSR

UDC 681.332.65

ABOLIN, Yu.Zh., BEREZKIN, B.S., et al.

"Majority-Redundant Pulse Device"

USSR Author's Certificate 271895, Filed 24/03/69. Published 9/09/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B253P).

Translation: Majority-redundant pulse devices containing redundant devices with feedback circuits, input and output assemblies, and memory elements are well known. However, in this type of redundant device a 1 recorded before the collection signal over the feedback loop is stored until the next operating cycle. It is read out by the first pulse from the redundant device and produces a false output pulse. The device suggested differs in that the output of each memory element is connected through input assemblies to the reading inputs of the two other memory elements. This increases reliability. 1 fig.

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USSR

UDC 621.374.33(088.8)

B
BEREZKIN, B. S.

"Pulse Train Separation Device"

USSR Author's Certificate No 249419, Filed 3 Apr 68, Published 27 Jan 70 (from
RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G289 P)

Translation: This author's certificate introduces a device for separating a pulse train containing a cycle pulse source, a trigger, a comparison circuit and a start button. To improve reliability, a switch connected to one of the trigger outputs is included in the device. The input of the switch is connected to one of the contacts of the start button and the integrating circuit is connected via a rectifier to the trigger input and to the cycle pulse source.

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Plant Pathology

USSR

UDC 633.11:632.4

BEREZKIN, L. L., Chair of the Genetics, Selection and Seed Growing of Field Crops

"Resistance to Brown Rust in Parental Forms of Wheat in F_1 Hybrids"

Moscow, Izvestiya Timirazevskoy Sel'skokhozyaystvennoy Akademii, Vol 5, Sep-Oct 73, pp 70-74

Abstract: L. L. Berezkin in 1970-71 studied the development of a virulent strain of spring wheat resistant to brown rust by crossbreeding various species of wheat with the F_1 hybrid. Seedlings were planted, isolated and contaminated with a brown rust infected agar compound. Environment was controlled for temperature. The following tables are given: (1) Resistance of Wheat to Brown Rust in the Different Phases of Development; (2) Resistance of Grain to Brown Rust in the Milky-Wax Ripeness Phase; (3) Development of Resistant Strains of Wheat to Brown Rust and the Relationships to the Wheats' Stage of Growth; (4) Field Resistance of F_1 Hybrids with the Maternal Form 0 Type Immunity 1 and 2 to Brown Rust, and (5) Field Resistance of F_1 Hybrids with Maternal Form 3 and 4 to Brown Rust. The immunological classification

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USSR

BEREZKIN, L. L., Izvestiya Timirazovskoy Sel'skokhozyaystvennoy Akademii,
Vol 5, Sep-Oct 73, pp 70-74

scale is given. The author concludes that the development of a strain of wheat with a high resistance to brown rust depends on the allelic state of the gene or genes in the parental forms being crossed and recommends the use of crossbreeding in which the F_1 hybrid is dominant.

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Hydrobiology

USSR

MARKEVICH, O. P., Academician of the Academy of Sciences Ukrainian SSR and
BEREZKIN, O. G., Candidate of Biological Sciences

"Activities of the Odessa Department of the Institute of Biology of the
Southern Seas"

Kiev, Vestnik Akademii Nauk Ukrainskoy SSR, No 9, 1971, pp 89-90

Abstract: Transactions of a conference dedicated to an analysis of the activities of the Odessa Department of the Institute of Biology of the Southern Seas (InBPM) held in Odessa 24-25 May 71 are reported. Scientists of the Academy of Sciences Ukrainian SSR and biologists of Odessa State University and Odessa Agricultural and Medical Institutes, 100 persons in all, participated in the conference. Doctor of Biological Sciences and Head of the Odessa Department of InBPM K. O. Vinogradov spoke about the scientific and organizational work carried out at the Department. Organized in 1963, it now employs 87 persons equally divided between three sections: ecological and biogeographical; hyponeuston; and biochemistry of marine organisms. He reported achievements made in the study of the laws governing the productive processes at sea-land and sea-river contact zones; the significance of the neuston phase in the development of ecological processes in the Southern seas; and 1/2'

USSR

MARKEVICH, O. P., and BEREZKIN, O. G., Vestnik Akademii Nauk Ukrainskoy SSR, No 9, 1971, pp 89-90

the biochemistry of marine organisms' adaptation in onto- and phylogenesis. The results of these studies have been published in 13 monographs and more than 300 articles. Yu. P. Zaytsev, a corresponding member of the Academy of Sciences Ukrainian SSR, emphasized the fact that the study of neuston is a priority subject at the department; other objectives are the investigations of fish resources, improvement of methods of finding the fish, and development of scientific methods of conservation of life in the seas and oceans. Reports given at sectional sessions encompassed a wide range of topics, such as the development of the ecological biochemistry of marine organisms; the formation of ecological systems in the seas and oceans; the presence of neuston microorganisms -- bacterioneuston, many of which have been found to have destructive properties with respect to oils and fatty acids, and which in a sense serve as sanitary workers of the sea and ocean waters. Talks were given also on the role which light plays in the vital activities of sea life. In a resolution adopted by the participants in the conference, recognition was given to the importance of the work being carried on at the department and the tasks which are to be carried out by the collective of department in the years of 1971-1975 were outlined.

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BEREZKIN, V. G.

USE OF GAS CHROMATOGRAPHY IN PETROCHEMISTRY
(Conference in Moscow)

[Article by Doctor of Chemical Sciences V. G. Berezkin, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 6, June 1973, pp 129-130]

5885 59718
6 Aug 1973

(15)

Increase of the effectiveness of scientific investigations and growth of the productivity and rate of chemical processes used in industry are stipulated to a considerable degree by the successful development of new physicochemical methods of conducting scientific experiments and controlling production. One such method is gas chromatography. Many quantitative determinations previously considered practically impossible are performed by means of gas chromatography in the course of minutes, and in some cases even of seconds. The method has high resolution and sensitivity, is readily automated, and makes it possible to effectively control technological processes.

The scientific councils for Petrochemistry and Chromatography, the Institute of Petrochemical Synthesis, Imeni A. V. Topchiyev of the AS USSR and the Scientific and Technological Council of the Ministry of Petroleum Refining and Petrochemical Industry USSR conducted on 5-8 February the first All-Union Conference on the Use of Gas Chromatography in Petrochemistry. Participating in it were over 200 persons representing over 90 scientific research organizations, enterprises, special design offices and VUZ. Thirty-four reports were heard.

In his introductory speech the Chairman of the Scientific Council for Chromatography of the AS USSR K. V. Chumakov noted the ever-increasing importance of gas chromatography in the analysis of complex mixtures in petroleum refining and petrochemistry. In studying the thermodynamics of absorption and adsorption and the processes of chemisorption and catalysis, and in determining the diffusive characteristics of gases and liquids and other physicochemical characteristics.

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF SURFACE LAYER ADSORBENTS FOR THE GAS CHROMATOGRAPHIC
DETERMINATION OF HEATS OF ADSORPTION -U-
AUTHOR-(02)-BEREZKIN, V.G., NIKITINA, N.S. B
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 537-9
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, GAS CHROMATOGRAPHY, ALKANE, PENTANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2060 STEP NO--UR/0076/70/044/002/0537/0539
CIRC ACCESSION NO--AP0125647
UNCLASSIFIED

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014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125647

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT: THE DETN. OF HEATS OF ADSORPTION OF C SUB5,C SUB12 ALKANES ON SURFACE LAYER ADSORBENTS BY GAS CHROMATOGRAPHY IS DESCRIBED. THE SURFACE LAYER ADSORBENT WAS PREPD. BY MECH. AGITATION OF CELITE NAX AND CHROMOSORB G(1:5) AND BY SIFTING OUT THE EXCESS CELITE NAX; 13PERCENT NAX PER CHROMOSORB G COLUMN, HE CARRIER GAS (40 ML PER MIN), AND A FLAME IONIZATION DETECTOR WERE USED. CHROMOSORB G DOES NOT ADSORB C SUB5,C SUB12 ALKANES. HEATS OF ADSORPTION WERE DETD. GRAPHICALLY FROM THE SLOPE OF THE LOG V SUB0 (RETENTION VOL.) VS. 1 PER DEGREE SK PLOTS. HEATS OF ADSORPTION OF THE C SUB5,C SUB12 ALKANES ARE PROPORTIONAL TO THE NO. OF C ATOMS, AND THEY INCREASE BY 0.9 KCAL PER MOLE FOR EACH CH SUB2 GROUP. THIS METHOD ENABLES THE QUANTITY OF ADSORBENT TO BE DIMINISHED, THE OPERATING TEMP. TO BE LOWERED TO 100-300DEGREES, AND THE WORK TO BE CARRIED OUT UNDER NEAR EQUIL. CONDITIONS. FACILITY: INST. NEFGEKHM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE MOLECULAR WEIGHT OF POLYMERIC STATIONARY LIQUID
PHASES WITH THERMAL FUNCTIONAL GROUPS ON THE RELATIVE RETENTION TIME
AUTHOR--(03)--ALISHOYEV, V.R., BEREZKIN, V.G., MIRZABAYEV, G.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1365-7 (PHYS CHEM) **B**

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

2/2 025


UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124381

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 NaCl 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

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GAS CHROMATOGRAPHIC STUDY OF A SURFACE LAYER ABSORBENT IN GAS
LIQUID CHROMATOGRAPHY -U-
AUTHOR--(02)-NIKITINA, N.S., BEREZKIN, V.G. 
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 535-41
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GAS CHROMATOGRAPHY, SORPTION, SURFACE AREA, HYDROCARBON
SEPARATION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1909 STEP NO--UR/0062/70/000/003/0535/0541
CIRC ACCESSION NO--AP0123693
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RETAINED VOL. VS. THE AMT. OF DISPERSE SORBETN AND THE VOL. OF THE LIQ. PHASE PLOTS ARE GIVEN FOR VARIOUS MIXTS. OF C SUB6 H SUB6, MEPH, NONANE, OCTANE, AND DECANE IN N STREAM USING CHROMOSORB W AS THE SOLID PHASE ALONG WITH SPHEROCHROMEL-1. FROM THE RESULTS OF SEPN. OF VARIOUS HYDROCARBONS IN THE MIXTS., IT WAS SHOWN THAT A VARIATION IS POSSIBLE IN THE SURFACE LAYER SORBENT TECHNIQUE OF CHROMATOGRAPHIC SEPN. IN WHICH THE FINELY DISPERSED SOLID SUPPORT WITH THE LIQ. ABSORBENT PHASE IS INTRODUCED INTO THE MACROPORES OF THE SOLID SORBETN CARRIER. THE TECHNIQUE IS SUPERIOR TO THE CONVENTIONAL VOL. SORBENT FOR THE SEPN. OF A NO. OF HYDROCARBON MIXTS.

FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GAS CHROMATOGRAPHIC DETERMINATION OF HEATS OF ADSORPTION -U-
AUTHOR--(05)-~~BEREZKIN, V.G.~~, NIKITINA, N.S., FATEYEVA, V.M., STAROSTINA,
N.G., STAROBINETS, L.L..
COUNTRY OF INFO--USSR *B*
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 19-21
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GAS CHROMATOGRAPHY, ALKANE, UNSATURATED HYDROCARBON,
ADSORPTION, HEAT OF SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0642 STEP NO--UR/0062/70/000/001/0019/0021
CIRC ACCESSION NO--AP0119554
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIRECT GAS LIQ. CHROMATOGRAPHIC METHOD MAY BE USED TO DET. THE HEAT OF ADSORPTION FROM AN IMMOBILE LIQ. PHASE TO A SOLID CARRIER SURFACE. THE HEAT OF SOLN. AND ADSORPTION OF ALKANES AND ALKYNES ON APEIZON K SUPPORTED BY THE CARRIER INZ-600 WAS DETD. ALKYNES GAVE HEATS OF ADSORPTION THAT ARE 5-8 KCAL-MOLE GREATER THAN THOSE FOR ALKANES, EXPLAINED BY SPECIFIC INTERACTION OF THE TRIPLE BOND WITH THE SUPPORT SURFACE. THE RESULTS FOR HEXANE, 1,HEXYNE, HEPTANE, AND 2,HEPTYNE ARE TABULATED. THE METHOD IS BASED ON THE DETN. OF THE RETENTION VOL. RELATIVE TO THE AMT. OF DEPOSITED LIQ. PHASE, FROM WHICH THE DISTRIBUTION COEFF. AT VARIOUS TEMPS. MAY BE CALCD.; THE CONTRIBUTION OF ADSORPTION TO THE RETENTION VOL. IS THEN ESTD. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.662:621.396.669

BEREZKIN, V. V., NITSIYEVSKIY, E. S.

"A Device for Isolating a Coherent Frequency"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299935, Division H, filed 12 Feb 68, published 26 Mar 71, p 204

Translation: This Author's Certificate introduces a device for isolating a coherent frequency. The device contains a converter which transforms the signal frequency to an intermediate frequency, a phase detector, a low-frequency filter, a frequency-controlled heterodyne, and a converter which transforms the intermediate frequency to the initial signal frequency, and also an optimum detector made in the form of a set of narrow-band filters which cover a predetermined frequency band and have an amplitude comparator at the output for selection of the maximum signal. As a distinguishing feature of the patent, the ratio of the capture band to the filtration band is increased by connecting the optimum detector between the output of the converter which changes signal frequency to intermediate frequency and one of the inputs of the phase detector.

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USSR

UDC: 621.372.061

BEREZKIN, V. V., POMIN, A. F.

"On an Investigation of the Workability and Threshold Properties of a Multichannel Frequency Demodulator"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 136-148 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A143)

Translation The authors consider the circuit of a multichannel frequency demodulator which consists of a device for signal detection and recognition (a bandpass filter array plus a maximum signal detector) and a frequency evaluation device (standard frequency discriminator). The resistance of the multichannel frequency demodulator to interference is analyzed. The procedure for experimentally checking the demodulator is described. Measurement results are given which indicate that the multichannel frequency demodulator has excellent workability and high resistance to interference in comparison with a standard frequency demodulator. It is noted that the circuit can be used for demodulation of both continuous FM signals and signals of the APM-FM type. Five illustrations, bibliography of eight titles. N. S.

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USSR

UDC: 534.222.2

BEREZKINA, M. A. and SYSECHIKOVA, M. P.


"Relaxation Process in a Shock Wave in a Partially Ionized Gas"

V sb. Vopr. fiz. nizkoterperatur. plazmy (Problems in the Physics of Low-Temperature Plasmas) Minsk, "Nauka i tekhn." 1970, pp 472-477 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2B256)

Translation: The structure of the main shock wave formed around a blunt body in an ultrasonic flow of ionized xenon and krypton particles is investigated in a shock tube. An optical system permitting simultaneous interferometric measurements of the density of a gas and the concentration of electrons directly in front of the main shock wave, and recordings of shadow pictures of the flow around the body, is described. Information is obtained about the size of the relaxation zone behind the main shock wave for different degrees of gas ionization in the incident flow. Author's abstract

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1/2 064 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EXPERIMENTAL STUDY OF THE CHARACTERISTICS OF A MACH REFLECTION IN A
SHOCK TUBE -U-
AUTHOR-(03)-SEменов, A.N., SYSHCHIKOVA, M.P., BEREZKINA, M.K. 
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL TEKHNIЧЕСКОИ ФИЗИКИ, VOL. 40, MAY 1970, P. 1033-1043
DATE PUBLISHED----MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SHOCK TUBE, MACH NUMBER, SHADOWGRAPH PHOTOGRAPHY, ARGON,
NITROGEN, CARBON DIOXIDE, FREON, SHOCK WAVE REFLECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605007/D09 STEP NO--UR/0057/70/040/000/1033/1043
CIRC ACCESSION NO--AP0139888

UNCLASSIFIED

2/2 064

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139888

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF SHADOW PHOTOGRAPH TO AN INVESTIGATION OF MACH REFLECTIONS IN ARGON, NITROGEN, CARBON DIOXIDE, AND FREON-12 AT MACH NUMBERS FROM 1.33 TO 6.34 IN A SHOCK TUBE.

A THEORY IS PROPOSED TO EXPLAIN THE PARADOX OF WEAK SHOCK WAVE REFLECTION. ACCORDING TO THIS THEORY, THE HUYGENS PRINCIPLE ACCOUNTS FOR THE MECHANISM OF TRANSFER OF AN ELEMENTARY SOURCE OF SOUND BY A SLIPSTREAM BEHIND AN INCIDENT SHOCK WAVE. THE SPECIFIC REFLECTION CHARACTERISTICS OF INTENSIVE SHOCK WAVES ARE LINKED TO THE DEVELOPMENT OF A HELICAL STREAM IN SECTIONS OF CONTACT DISCONTINUITIES ADJACENT TO THE SHOCK TUBE WALL. FACILITY: AKADEMIIA NAUK SSSR, FIZIKO-TEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.791.753.042.4:669.018.45:539.434

LOZITSKIY, L. P., Doctor of Technical Sciences, BEREZLEV, V. F., Engineer, IVANENKO, A. A., Candidate of Technical Sciences, KOROLEVA, Z. G., Candidate of Technical Sciences, MUSIYENKO, B. I., Engineer, and MOLOCHKOV, M. A., Candidate of Technical Sciences, Kiev Institute of Civil Aviation Engineers

"Thermal Fatigue Resistance of Welded Joints of EP99 Alloy Performed with Electrodes of Different Marks" (Reported at the All-Union Conference "Estimate of the Supporting Power of Materials and Welded Joints According to Breakdown Mechanics," Kiev, Dec 72)

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

Abstract: An experimental study was made of the effects of heating temperature and thermal cycling on the depth of thermal fatigue cracks and the mechanical properties of welded joints of EP99 alloy welded with NIAT-8 and NIAT-7 electrodes. The parameters characterizing the injuriousness of the specimens in the process of thermal fatigue tests are the depth of cracks, their growing rate, and changes in residual strength, plasticity, and structure. The results are discussed by reference to diagrams showing the depth of crack dependence on maximum cycling temperature and on the quantity of thermal

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USSR

LOZITSKIY, I. P., et al., Avtomaticheskaya Svarka, No 1(250), Jan 74,
pp 39-42

cycling and the residual strength and relative narrowing dependences on the maximum temperature after 2000 heat cycles. Specimens welded with NIAT-8 electrodes possessed higher thermal fatigue strength in comparison with specimens welded with NIAT-7 electrodes. The increased Cr content (up to 21%) of the joint welded with the NIAT-7 electrode resulted in decreased thermal fatigue strength of the welded specimen. Four figures, two tables, two bibliographic references.

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USSR

UDC 8.74

BEREZNAYA, I. YA., and GURARI, V. E.

"Stabilization of Output Sequences -- Phase Linear Filter"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems in Bionics -- Collection of Works in Republic Interdepartmental Scientific and Technical Program), 1971, vyp. 7, pp 39-47 (from RZh-Matematika, No 5, May 72, Abstract No 5V491 by V. MIKHEYEV)

Translation: The article investigates peculiarities in the transformation of nonzero stable sequences in a circuit of n ($n = 1, 2, \dots$) series-connected models of on-off neurons. A sequence which, when presented at the input of a basic neuron circuit, is encountered at the output of some neurons of this circuit is said to be a stable sequence. The authors deal with the stabilization of the set of output sequences -- that property of transformation of input sequences in the basic circuit which consists in the fact that, from a certain neuron on, the set of output sequences in all the subsequent neurons does not vary. It is shown that inasmuch as the basic circuit is a variety of finite automata, stabilization of output sequences is a particular case of the general property of automata, which consists in the fact that a finite automation with the number of states K converts any periodic sequence with period L and length $1/2$

USSR

BEREZHNAYA, I. YA., and GURARI, V. E., Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb., 1971, vyp 7, pp 39-47

μ of the preperiod into a periodic sequence with a period no greater than $K\omega$ and reduced length no greater than $\mu + K\omega$. A description is given of the structure of a stable set of output sequences.

USSR

UDC: 8.74

BEREZNAYA, I. Ya., GURARI, V. E.

"Stabilization of Output Sequences of a Linear Cadence Filter"

Probl. bioniki, Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics, Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 7, pp 39-47 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V491)

Translation: An investigation is made of the particulars of transforming non-zero stable sequences into chains of n ($n=1, 2, \dots$) series-connected models of on-off Neurons. A stable sequence is defined as one which, when sent to the input of the main chain of neurons, appears at the output of certain neurons in this chain. The authors consider stabilization of a set of output sequences -- the property of conversion of input sequences in the main chain which consists in the fact that, beginning with some neuron, the set of output sequences for all subsequent neurons does not change. It is shown that since the main chain is a type of finite automaton, stabilization of output sequences is a special case of a common property of automata which consists in the fact that a finite automaton with number of states K converts any periodic sequence with period ω and length u of the preperiod to

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USSR

BEREZHNAYA, I. Ya., GURARI, V. E., Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb., 1971, vyp. 7, pp 39-47

a periodic sequence with period of no more than $K\omega$, and reduced length of no more than $\mu + K\omega$. The structure of a stable set of output sequences is described. V. Mikheyev.

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USSR

UDC: 51:155.001.57:612.82

SHAUMAN, A. M., BEREZNAYA, I. Ya.

"Conversion of Input Information by a Chain of Neuron Models"

V sb. Neyrobionika (Neurobionics--collection of works), Kiev, 1970, pp 177-183 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V893)

Translation: The simplest homogeneous branchless chain of series connected neuron models, called a base chain, is treated as a filter which permits division of all input sequences into two classes: zero and non-zero. It is shown that the zero sequences of a base chain of n neurons form a certain regular system in the shape of a convergent tree. Formulas are derived for calculating the volume of the class of zero sequences for a base chain of given length, and for determining the form of the zero sequences and their properties. Corresponding theorems and their proofs are presented. V. Mikheyev.

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USSR

UDC: 681.3

BEREZNAYA, I. Ya., SHAUMAN, A. M.

"Null Sequences for an n -Cycle Line Filter"

V sb. Vychisl. tekhn. i vopr. kibernet. (Computer Technology and Problems of Cybernetics--collection of works), vyp. 8, Leningrad, Leningrad University, 1971, pp 92-107 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V909)

Translation: The authors consider the properties of input null sequences for an n -cycle line filter. A convergent tree of null sequences is constructed. It is noted that when such a tree has been constructed, the form of the output sequence of any element of the n -cycle filter can be determined correct to the class of equivalence when any sequence with a period equal to a power of two is sent to the output of the filter.
V. Mikheyev.

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USSR

UDC: 51:621.391

KLYUCHKO, V. I., BEREZNIKOV, G. Ye.

"Codes With Cyclic Verification Matrix"

Pribery i sistemy avtomatiki. Resp. mezhved. temat. nauch.-
-tekhn. sb. (Automation Devices and Systems. Republic Interde-
partmental Thematic Scientific and Technical Collection), 1972,
vyp. 24, pp 119-127 (from RZh-Kibernetika, No 10, Oct 72, ab-
stract No 10V467 [authors' abstract])

Translation: A verification matrix which belongs to a cyclic
space is taken as the basis for synthesizing a code which gives
a maximum value of the minimum code space at rate $R_g = 0.5$ for a
code word which contains g information symbols when the length
of the code restrictions $K \leq g$. An algorithm is presented for
finding the optimum polynomials for synthesizing such codes and
computer modeling to check the validity of the results.

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B
USSR

UDC 666.1.056(088.8)

BAYGOZHIN, A., PANFILENOK, YE. I., RODIONOVA, M. S., BEREZNIKOVSKAYA, L. V.,
SUYKOVSKAYA, N. V.

"Method of Protecting Optical Parts of Apparatuses"

USSR Author's Certificate No 233190, filed 15 May 67, published 26 Jun 69
(from RZH-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 70, Abstract No
2.32.1365 P)

Translation: According to the proposed method the coated optical parts are treated in iodine vapors. First, the rotating parts are coated with alcohol solution of tetraethoxysilicon into which 3% of vinyltriethoxysilane is introduced, and then they are treated in iodine vapors. Thus, a film of 1,2-diiodethylsiloxane is formed on the surface of optical part which possesses fungicide properties.

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Pathology

USSR

UDC 616.981.42-07: [616.153.96+616.13-008.67]-07

IOPATINA, ZH. MO., BEREZNITSKAYA, A. M., DEGTYAREV, YU. N., and KOZHEVNIKOVA, L. V.

"Dynamics of Protein Fractions in the Blood Serum and Vascular Permeability in Patients With Brucellosis"

Moscow, Terapevticheskiy Arkhiv, Vol 43, No 2, Feb. 71, pp 62-67

Abstract: Clinical and laboratory studies of patients with brucellosis were conducted to determine shifts in protein content and vascular permeability as supplementary criteria indicating the activity of brucellosis infection. Total protein content was studied with the use of a refractometer. The serum content of protein fractions by the method of paper electrophoresis and vascular permeability by the rate of semiabsorption of 5 millicuries of I131 from intracutaneous deposits. A total of 531 patients with brucellosis and 50 healthy people in the control group were investigated. An analysis of the data obtained revealed dysproteinemia, hypoalbuminemia, an increase in the blood content of alpha- and gamma-globulins, and increased vascular permeability in the overwhelming majority of patients during the most active periods of brucellosis, especially when on high allergic reactivity and inflammation were also present. A tendency toward normalization of the above

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USSR

LOPATINA, ZH. MO., et al., *Terapevticheskiy Arkhiv*, Vol 43, No 2, Feb 71, pp 62-67

criteria was observed with abatement of clinical manifestations of brucellosis and the remission of the disease. Therapy consisted of the administration of antibiotics -- tetracycline + streptomycin, vaccine in combination with trasylol, prednisolone, aspirin or pyrasolone preparations. All produced positive results. Some of the preparations apparently affected the dynamics of protein shifts and vascular permeability changes; no precise parallelism, however, has been established. After being discharged from the hospital, the patients were kept under observation for periods of 3-4 years. Retardation of the normalization of the protein picture and vascular permeability was noted in a number of patients, indicating the persistence of brucellosis process. The recurrence of the disease occurred most frequently among these patients.

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therapy

USSR

LOPATINA, Zh. M., BEREZNITSKAYA, I. M., DEGTYAREV, Yu. N., and KOZHEVNIKOVA, L. V., Semipalatinsk Medical Institute

"Prognostic Value of Dysproteinemia and Increased Vascular Permeability in Brucellosis Patients"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30

Abstract: Observation of 531 brucellosis patients showed a relationship between the dynamics of vascular permeability, serum proteins, and the response to therapy. Dysproteinemia and increasing vascular permeability were characteristic of those refractory to therapy. Follow-up examinations of patients after discharge from the hospital revealed that recurrences were most likely among those with continuing dysproteinemia and increased vascular permeability. In most persons examined in a period of clinical remission, serum proteins and vascular permeability were within normal limits. A few exhibited pathological changes -- decrease in albumins, increase in alpha and gamma globulins, and slightly increased vascular permeability -- and it was this group that was mostly likely to have relapses. Thus, dysproteinemia and increased vascular permeability are unfavorable prognostic signs. However, a normal blood picture in a period of remission is not a reliable indicator of complete

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USSR

LOPATINA, Zh. M., et al., Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30

recovery, for it was observed at this time even in persons who subsequently suffered relapses.

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1/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--UPPER TRIASSIC BUAXITES AND LATERITES OF THE EASTERN SLOPES OF THE
SOUTHERN URALS -U-
AUTHOR--(02)-GUTKIN, YE.S., BEREZNITSKAYA, R.YA.
COUNTRY OF INFO--USSR
SOURCE--SOV. GEOL. 1970 13(1) 48-61
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--BAUXITE, GEOCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0310 STEP NO--UR/0215/70/013/001/0048/0061
CIRC ACCESSION NO--AP0113240
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113240

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE BAUXITES WERE FORMED BY REDEPOSITION OF A LATERITE WEATHERING PROFILE. THE LATERITES AND RESIDUAL ALLITES WERE PRESERVED PREDOMINANTLY IN THE AREA OF THOSE TECTONIC BLOCKS WHICH WERE NOT UPLIFTED. URAL BAUXITES AND LATERITES HAVE SIMILAR COMPN. THE X RAY DIFFRACTION PATTERNS OF SAMPLES, TAKEN FROM THE WEATHERING PROFILE ON DIABASES, HAVE INTENSE LINES OF KAOLINITE AND GIBBSITE. GIBBSITE, KAOLINITE, AND MONTMORILLONITE WERE DETECTED IN X RAY DIFFRACTION PATTERN OF ALLITE SAMPLES ACCORDING TO THE SET OF LINES OF DIFFERENT INTENSITIES. THE CLASTIC MATERIAL, DELIVERED INTO THE SEDIMENTATION BASIS WAS FORMED BY EROSION OF LOCAL VOLCANIC SEDIMENTARY ROCKS AND WEATHERING PROFILES. THE EROSION PRODUCTS WERE TRANSPORTED A SHORT DISTANCE. THIS IS SUBSTANTIATED BY COMPN. OF CLASTIC ROCKS AND RELATIVELY LOW DEGREE OF GRAIN ROUNDING. THEREFORE, BOTH SEDIMENTARY BAUXITES AND ALLITE OF TRIASSIC AGE, AND LATERITES OF THE SAME AGE, ARE NOW KNOWN IN THE SOUTHERN URALS. ACCORDING TO THE COMPN., FORMATION CONDITIONS, AND AGE, THE SOUTHERN URAL BAUXITES ARE SIMILAR TO THE LOWER MESOZOIC BAUXITES AND BAUXITE LIKE ROCKS KNOWN IN THE EASTERN SLOPES OF THE NORTHERN URALS. THIS SUGGESTS THAT LATERITES CAN ALSO BE FOUND IN THE NORTHERN URALS.

UNCLASSIFIED

USSR

UDC: 621.313.333(083.75)

PERTSOV, G. I., Candidate Technical Sciences; ~~MELENIY, Ya. A.~~
OSIPOVICH, V. P., and SHIRNIN, I. G., Engineers

"New Government Standard on Explosion-Proof Asynchronous Motors
of the VAO Series with Power Ratings of from 132 to 1000 Kilowatts"

Moscow, Elektrotehnika, No. 2, February 1971, pp 59-60

Abstract: This standard is the second on motors of the VAO series to be stated, the first relating to machines with a power rating of up to 100 kW. The need for the standards was stimulated by requirements for high-power asynchronous electric motors for the growing number of chemical plants, for mining in general and hydraulic mining of coal in particular. Up until recently, the requirements of the national economy for low-voltage explosion-proof electric motors with higher power ratings than 100 kW were satisfied by the MA-36 motor. From the viewpoint of weight and

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USSR

PERTSOV, G. I., et al, Elektrotehnika, No 2, Feb 71, pp 59-60

energy output, however, the MA-36 is inferior to the best foreign motors. High-voltage explosion-proof electric motors were not put into production in the Soviet Union until 1968. The machines to which the new standard applies were developed by the Institute of the VNIIE /expansion unknown/ in cooperation with the Elektromash, Sibelectrotyazhmash, and Karl Marx First of May Plants.

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B
USSR

UDC 539.318.1:621.383.1

BEREZNYAKOV, A. I., and MIL'NER, A. S., Kharkov State University of A. I. Gorkiy

"Influence of Substrate Temperature on Perpendicular Anisotropy of Thin Permalloy Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 2, 1975, pp 530-534

Abstract: A study is made of the influence of substrate temperature on perpendicular anisotropy of permalloy films. Films on the order of 100 Å thick were produced by evaporation of permalloy-80 in a vacuum. The constant of perpendicular anisotropy measured at -196° , depends strongly on substrate temperature and changes its sign in the 30-50° C temperature interval. Since the constant of perpendicular anisotropy is on the order of 10^6 erg/cm², while the magnetoelastic energy of permalloy-80 is very slight, it is assumed that its existence results from anisotropy of the form of the individual particles composing the film.

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USSR

UDC 51:621.391

KLYUCHKO, V. I., and BEREZNYAKOV, G. Ye.

"Codes With Cyclical Verified Matrices"

Pribery i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
(Automation Devices and Systems, Republic Interdepartmental Scientific-
Technical Thematic Collection), No 24, 1972, pp 119-127 (from RZh--
Matematika, No 10, 1972, Abstract No 10V467)

Translation: The verified matrix belonging to the cyclical subspace is used as the basis of the synthesis of a code providing, for a velocity of $R_g = 0.5$, a maximum quantity of minimum code distance in a code word containing g information symbols for a length of code limits $K \ll g$. An algorithm is given for finding the optimal polynomials for the synthesis of such codes, and an electronic computer simulation is made for the purpose of verifying the accuracy of the results obtained. Authors' abstract.

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USSR

UDC 548.0

B
BEREZNYAKOVSKIY, Ye. N., and SHATALOV, A. A., Kiev State University imeni T. G. Shevchenko

"Photoconductivity and Conduction in Photochemical Transformation of F-Centers in Heated Potassium Chloride Crystals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 87-93

Abstract: The article describes results of a study of the electrical conductivity and photoconductivity of colored KCl crystals during the photochemical transformation of F-centers into X-centers, as well as during the thermal breakdown of the latter. Potassium chloride single crystals grown from the melt by the Kyropoulos method were used for the study. There was found to be a correlation between the time curves for photoconductivity and the absorption coefficient in the F-band maximum during the course of the photochemical reaction. The results indicate that the photochemical transformation of F-centers into X-centers is due to excitation of F-center electrons into the conduction band, which fact rules out the possibility of using a monomolecular reaction to explain the transformation. The photochemical transformation of F-centers into X-centers is accompanied by an increase in the dark ionic conduction of the crystal, which fact confirms the ionic mechanism of X-center formation. The authors intend to make a detailed study of the influence of impurities in subsequent investigations.

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USSR

UDC 616.216.2-001.1-06+616.831-005.7

BEREZNYI, V. I., Candidate of Medical Sciences, Forensic Medical Laboratory

"Two Cases of Injury to the Auditory Analysor by Thunderstorm Electricity Discharge"

Kiev, Zhurnal Uzhnykh Nosovykh i Gorlovykh Boleznay, No 6, 1971, p 98

Abstract: Patient D., 28, was struck by lightning, remained unconscious for 2 hrs and, upon hospitalization, complained of pain in the right ear, headache, vertigo, noise in both ears, nausea, vomiting, and general weakness. In several days, his general condition, including vestibular function, recovered, but both his ears remained insensitive to whisper and conversational voice. Patient V., 44, was also unconscious for several hrs after being struck by lightning. He was delivered to the hospital with skin burns and complaints of loud noise in both ears and a general weakness. His auditory acuity in the right ear had been defective since the age of 20. One month after discharge from the hospital, the diagnosis of complete loss of hearing in the right ear was established.

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BEREZOV, T.T.

UDC: 616-006.04-085.355
 THE PROBLEM OF CHEMOTHERAPY OF TUMORS
 Article by T.T. Berezov, People's Friendship University, Inst. Patrice Lumumba,
 Moscow; Vostochno-Akademi Meditsinskikh Nauk SSSR, Russian, No 11, 1971,
 pp 35-46]

UDC 54767
 22 Dec 1971

Progress in the treatment of any pathology is determined by knowledge about the essence of the disease, its etiology, pathogenesis, and clinical features in the clinical findings. In the case of neoplastic pathology, all of these aspects are still largely unresolved. A number of investigators have performed considerable work to determine the distinctive features referable to chemical composition and metabolism in tumors (S.R. Mardashev, 1968; Greenstein; A.K. Bejuzova, 1965; T.T. Berezov, 1968, 1969). In order to determine the nature of metabolic disturbances that could have played a significant part in the transformation from normal to malignant cell, as well as to develop, on the basis of biochemical data, effective methods of fighting against neoplastic diseases. However, until recently (Jacob and Rhod; Shantzen; Green; A.N. Belozerskiy; Dickerson), the genetic and enzymatic system controlling synthesis of specific nucleic acids and proteins, which are related to normal growth, remained inadequate for experimental investigation; thus, it was not deemed feasible to detect disturbances in this system leading to tumorous growth.

At the present time, most investigators adhere to the view that malignant transformation, like differentiation of cells of higher organisms, is related to epigenetic mechanisms which do not include changes in the primary structure of genomic DNA, rather than to genotypic mechanisms. When cell culturing conditions are altered it is possible to induce suppression (repression) of some genes and activation of others which, perhaps, is the reason for malignant regeneration of some cells. It is assumed that processes of differentiation and malignant transformation of cells are caused by factors that act at the stage of template synthesis of mRNA, i.e. at the first stage of transmission of genetic information or at the level of the transcription process (Yu.M. Olenov, 1967, 1970; V.S. Turusov).

Modern oncology has developed a wide program for perfecting the ways and means of treating patients with malignant neoplasms (V.M. Bergol'tse; Shekilk;

BEREZOV, Yu. Ye.

COLONOSCOPY IN COLON PATHOLOGY DIAGNOSTICS

UDC: 616.34-072.1

JPRS 55569
29 Feb 72

[Article by Yu. Ye. Berezov, V. N. Semilov, Yu. M. Kornilov, Second Moscow Medical Institute named after Pirogov, Moscow, Vozrast Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 65-69]

The use in surgical practice of colonoscopes with flexible optical elements has expanded considerably the opportunities for clinicians to examine pathological states in the colon at different levels. Inflammatory and ulcerative processes, atrophic and cicatricial changes in the mucosa, and a number of other diseases of the colon are often impossible to detect by means of irrigoscopy. In diagnostically difficult cases visual examination of the mucosa up to the ileocecal valve often settles a visual doubt and permits choosing the proper method of therapy.

For a long time, only the distal colon was accessible to endoscopic examination. In 1928, Hoff first succeeded in passing an elastic tube through the intestinal lumen to the ileocecal angle. However, colonoscopy as an investigative method, began to develop in the last few years with the appearance of fiberoptic instruments (Yamagata et al.; Dean et al., and others).

We performed 47 colonoscopies and 38 combined colonoscopy and laparoscopies in the presence of diverse pathology of the colon. The purpose of endoscopy was: 1) determination of the causes of vague pain along the course of the colon; 2) establishment of the source of hemorrhages from the colon and etiology of chronic constipation or diarrhea; 3) differential diagnosis of ulcerations of the mucosa and determination of type of tumor; 4) monitoring the effectiveness of conservative treatment of inflammatory disease of the colon and polypoidosis.

In order to pinpoint the exact boundaries of pathological elements, the extensiveness of the tumor process, and for preventive examination of patients who underwent colon resection for carcinoma, a combined colonolaparoscopic examination was made.

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SURGERY OF GASTRODUODENAL PEPTIC ULCER -U-
AUTHOR--(02)-BEREZOV, YU.YE., YERMOLOV, A.S.
COUNTRY OF INFO--USSR *B*
SOURCE--KHIRURGIYA, 1970, NR 4, PP 30-36
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, SURGERY, HEMORRHAGE, DUODENUM,
STOMACH, SECRETION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1240 STEP NO--UR/0531/70/000/004/0030/0036
CIRC ACCESSION NO--AP0054135
UNCLASSIFIED

2/2 - '027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054135

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS THE MAIN PROBLEMS CONCERNED WITH SURGERY OF PEPTIC ULCER. THE INDICATIONS TO THE OPERATIVE TREATMENT OF THIS DISEASE ARE DISCUSSED. OPERATIVE TREATMENT IS DEEMED INDICATED MAINLY IN COMPLICATIONS OF PEPTIC ULCER. IN A NONCOMPLICATED COURSE OF THE DISEASE OPERATIVE TREATMENT IS DEEMED EXPEDIENT ONLY WHEN IT IS IMPOSSIBLE TO ACHIEVE A STABLE REMISSION WITH THE AID OF THERAPEUTIC METHODS. THE SURGEONS TACTICS IN PERFORATIVE AND HEMORRHAGIC GASTRODUODENAL ULCERS IS DISCUSSED. THE AUTHORS ARE OF THE OPINION THAT IT IS EXPEDIENT TO PERFORM PALLIATIVE INTERVENTIONS IN SUCH COMPLICATIONS AND TO LIMIT THE USE OF RADICAL OPERATIONS (IN THE TREATMENT OF PEPTIC ULCER) ONLY IN THE PRESENCE OF STRICT INDICATIONS. THE POSSIBILITY AND EXPEDIENCY OF USING VAGOTOMY IN COMBINATION WITH DRAINAGE OPERATIONS AND ANRECTOMY ARE DISCUSSED. BASING UPON THE EXPERIENCE GAINED WITH 116 OPERATIONS FOR GASTRODUODENAL PEPTIC ULCER THE AUTHORS PROPOSE TO DETERMINE THE TYPE OF OPERATION IN ADDITION TO VAGOTOMY DEPENDING UPON THE TYPE OF MOTORICITY AND SECRETION OF THE STOMACH.

UNCLASSIFIED

USSR

UDC 539.3

BEREZOVSKIY, A. A., ZHARIY, Yu. I.

"Nonlinear Boundary Value Problems of the Theory of Flexible Plates and Shallow Shells"

Nelineynyie krayevyye zadachi teorii gibkikh plastin i plogikh obolochek.
Tr. Seminara po mat. fiz. In-t mat. AN USSR (cf. English above. Works of the Seminar on Mathematical Physics. Institute of Mathematics of the Academy of Sciences of the Ukrainian SSR), 1970, vyp. 4, 416 pp, ill.
(from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V68)

Translation: Problem formulation is discussed as well as questions of the existence and uniqueness and methods of constructing approximate solutions of nonlinear boundary value problems of the theory of flexible plates and shallow shells.

The first chapter outlines known premises and hypotheses, and presents the derivation of fundamental equations of the theory of flexible plates and shallow shells. Principal attention is given to the energy derivation of the fundamental equations.

The second chapter deals with the reduction of linear and nonlinear

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USSR

BEREZOVSKIY, A. A., ZHARIY, Yu. I., Nelineynyye krayevyye zadachi teorii gibkikh plastin i pologikh obolochek. Tr. Seminara po mat. fiz. In-t mat. AN USSR, 1970, vyp. 4, 416 pp, ill.

problems of the theory of shells to integral equations. Problems of constructing the Green's tensor in a given situation are discussed in detail, as well as questions of the integral representation of an arbitrary vector function and vector potentials. The construction of classical and generalized solutions of the given problem is considered for the case where the right-hand members of the boundary value problems are discontinuous or are generalized vector functions.

The third chapter is devoted to reducing axisymmetric problems of the theory of flexible shallow shells of revolution to integral equations. In particular, an equivalent system of nonlinear integral equations of flexible spherical shells is constructed, and the solvability of this system is discussed.

The next chapter discusses some approximate methods of constructing solutions of nonlinear boundary value problems of the theory of flexible plates and shells. Energy methods are considered as well as methods of approximating the kernels of nonlinear integral equations by degenerate

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USSR

BEREZOVSKIY, A. A., ZHARIY, Yu. I., Nelineynyye kravevyye zadachi teorii gibkikh plastin i plogikh obolochek. Tr. Seminara po mat. fiz. In-t mat. AN USSR, 1970, vyp. 4, 416 pp, ill.

kernels. The method of perturbations and the method of successive approximations are discussed briefly. In addition, application of the Riesz-Fisher equations to solution of nonlinear problems of the theory of shells is considered.

The fifth chapter deals with problems of finding approximate solutions for specific cases of bending and stability of thin plates and shallow shells; specifically, large bends of shallow shells are considered where the planform is rectangular and the shell is loaded by moments distributed around the edge, as well as the problem of compression and bending of a shallow cylindrical panel, snapping of shallow spherical and conical shells under the effect of uniform external pressure and concentrated annular loads for various types of fastening, large bends of circular and elliptical plates, and other problems. These problems are solved by the method of approximating the kernels of nonlinear integral equations by degenerate kernels, the solution being limited as a rule to the first approximation.

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USSR

BEREZOVSKIY, A. A., ZHARIY, Yu. I., Nelineynnye kravevyye zadachi teorii gibkikh plastin i pologikh obolochek. Tr. Seminara po mat. fiz. In-t mat. AN USSR, 1970, vyp. 4, 416 pp, ill.

In order to evaluate the accuracy of the resultant solutions, some of the problems are solved in addition by the method of perturbations and by the method of successive approximations.

The sixth chapter analyzes the oscillation and dynamic stability of shallow shells of revolution. The behavior of a closed spherical shell is considered for the case where it is subjected to the action of periodically changing normal external pressure, and also the problem of vibration shaking of a spherical shell whose supporting edge moves according to a periodic law.

The last two chapters (the seventh and eighth) discuss problems of the existence and uniqueness of generalized solutions of geometrically nonlinear problems of statics of the theory of plates and shallow shells of revolution, as well as problems of physically nonlinear shallow shells of revolution. Bibliography of 142 titles. V. I. Mamay.

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USSR

UDC 693.547.3

BEREZOVSKIY, B.I., Candidate of Technical Sciences, PAVLENKO, O.I., Engineer
(~~North~~ Scientific Research Department of the Krasnoyarsk Promstroyniiprojekt)

"Increment of Concrete Strength Poured in Holes in Permafrost Grounds"

Moscow, Beton i Zhelezobeton, No 6, June 71, pp 9-12

Abstract: Data are presented on experimental and production investigations carried out on technology of concrete pile foundations in permafrost grounds, made in the form of piles 450 mm in diameter and 6-8 m long, with an enlarged base (0.8-1.2 m in diameter). The drilling procedure, experimental technique and a series of measurements of soil and concrete temperature before, during and after casting, are described and the results are given in tables. Methods for estimating the strength increment of concrete poured in permafrost grounds are outlined. Theoretical and engineering formulas for determining the time of concrete strengthening in holes in permafrost grounds in correlation with ground temperature and time of the year are derived on the basis of experimental data.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF DEFORMATION VELOCITIES IN ROLLING USING A COMPUTER
-U-
AUTHOR--(03)-CHELYSHEV, N.A., ALYUSHIN, YU.A., BEREZOVSKY, B.N.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970 (2), 80-86
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL ROLLING, COMPUTER APPLICATION, METAL DEFORMATION,
DEFORMATION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0554 STEP NO--UR/0148/70/000/002/0080/0086
CIRC ACCESSION NO--AP0124249
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF DETERMINING THE FLOW AND DEFORMATION VELOCITIES IN THE STEADY STATE PLANE ROLLING OF METALS BY REF. TO THE EXPERIMENTALLY OBSERVED FLOW PICTURE IS DESCRIBED, AND AN ALGORITHM FOR THE NUMERICAL SOLUTION OF THIS PROBLEM ON A COMPUTER IS PROPOSED. SOME TYPICAL CASES OF ROLLING ARE ANALYSED ON THIS BASIS; ONE RESULT OF THE ANALYSIS IS A CLEAR REPRESENTATION OF 'DANGER' POINTS AT WHICH THE CONTINUITY OF THE METAL BEING ROLLED MAY BE DISRUPTED BY THE ROLLING FORCES.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ERADICATION OF MOUNTAIN BLUET USING BENZOIC ACID DERIVATIVES -U-
AUTHOR--BEREZOVSKIY, M.YA., RASKIN, M.S. *B*
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(1), 36-41
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HERBICIDE, BENZOIC ACID/(U)TRISBEN 200 HERBICIDE, (U)SANVEL O
HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1738 STEP NO--UR/0394/70/003/001/0036/0041
CIRC ACCESSION NO--AP0109699
ZZZZZZZZZZZZ UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0109699

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIELD EXPTS. ON ERADICATION OF THE MOUNTAIN BLUET WERE CARRIED OUT IN A ZONE OF INSUFFICIENT RAINFALL USING TRISBEN 200 (2,3,6,CL SUB3 C SUB6 H SUB2 CO SUB2 NH SUB2 ME SUB2), 2-KF (DIMETHYLAMINE SALTS OF POLYCHLORO BENZOIC ACIDS), AND BANVEL-D 3,6,CL SUB2 2(MEO)C SUB6 H SUB2 CO SUB2 ME SUB2). THE WEEDS WERE SPRAYED IN THE SPRING OR AUTUMN WITH 1000 L.-HA OF A SOLN. CONTG. 5-15 (BANVEL-D), 20, OR 50 KG OF A HERBICIDE. AT THE DOSES INDICATED THE WEED WAS COMPLETELY ERADICATED WITH ALL HERBICIDES. THE MOST EFFECTIVE WAS BANVEL-D, AND THE LEAST, 2-KF. BOTH TRISBEN-200 AND 2-KF REMAINED EFFECTIVE IN THE SOIL FOR GREATER THAN 4 YEARS. A SUBSTANTIAL DISADVANTAGE OF THE PREPNS. WAS THEIR DELETERIOUS EFFECT ON MAIZE AND WINTER WHEAT. THESE CROPS COULD NOT BE PLANTED UNTIL 2 AND 4 YEARS, RESP., AFTER USING THE PREPNS. BANVEL-D PERSISTED FOR 1-2 YEARS.

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UNCLASSIFIED

USSR

UDC 577.150.13:541.67

MISHCHENKO, V. V., SHAPIRO, T. A., RUBCHINSKAYA, Yu. M., KHRISTIANOVICH, KHOMUTOVA, Ye. D. and BEREZOVSKIY, V. M., All-Union Scientific Research Institute of Vitamins

"Nucleotides, Coenzymes, and Phosphoric Acid Esters. XXVIII. Spectroscopic Investigation of Intramolecular Interaction in FAD and Its Analogs"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2547-2551

Abstract: By studying circular dichroism, fluorescence, and paramagnetic resonance, it was established that in aqueous solutions flavin-adenine dinucleotide (FAD) and its analogs differing with respect to the number of phosphoric acid groups, which ranged from one to four in the compounds investigated, exhibited interaction between the flavin and adenine parts of the molecule. With an increasing length of the phosphoric acid chain connecting the two parts of the molecule, the magnitude of the intramolecular interaction decreased.

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USSR

UDC 547.859:577.150.13 + 577.164.12

BEREZOVSKIY, V. M., and MEL'NIKOVA, L. M., All Union Scientific Vitamine Research Institute

"Nucleotides, Coenzymes, and Phosphoric Esters. XXVII. Synthesis of 2-Thioflavinemononucleotide and 2-Thioflavineadeninedinucleotide"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 921-926

Abstract: A practical synthetic method has been developed for 2-thioriboflavine-5'-monophosphate based on phosphorylation of 2-thioriboflavine with hydrated phosphorus oxychloride in a stream of nitrogen at 20° without protection of the secondary hydroxyl group. The isolation of the product was carried out in presence of butyloxytoluene acting as an antioxidant. Condensing tri-n-octylammonium salt of 2-thioriboflavine-5'-monophosphate with 4-morpholine-N,N'-dicyclohexylcarboxyamidinium salt of adenosine-5'-phosphomorpholide let to the synthesis of 2-thioflavineadeninedinucleotide. The reaction was carried out in anhydrous pyridine and dimethylformamide at 50-55° in presence of butyloxytoluene as an antioxidant.

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USSR

UDC 547.859:577.150.13:577.164.12

SHAPIRO, T. A., KHOMUTOVA, YE. D., BEREZOVSKIY, V. M., All-Union Scientific Research Institute of Vitamins

"Nucleotides, Coenzymes, Phosphate Esters. XXVI. Synthesis of P^1 -(Riboflavin-5')- P^2 -[adenosine-2'(3')phospho-5']diphosphate and P^1 -(Riboflavin-5')- P^1 -(adenosine-5') Monophosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1634-1638

Abstract: The paper describes synthesis of the monophosphate structural analog of flavin adenine dinucleotide -- P^1 -(riboflavin-5')- P^1 -(adenosine-5') monophosphate (RADP) -- and a flavin adenine dinucleotide phosphate (FADP) analogous to natural nicotine anide adenine nucleotide phosphate in which the third phosphate group occupies the 2'(3') position of the ribose part of the adenosine -- P^1 -(riboflavin-5')- P^2 -[adenosine-2'(3')-phospho-5'] diphosphate. Phosphate FADP was synthesized from tri-n.-octyl ammonium salt of riboflavin-5'-phosphate and 4-morpholino-N,N'-dicyclohexylcarboxamidinium salt of adenosine-2'(3')-phospho-5'-phosphomorpholide. The reaction was done in a mixture of anhydrous pyridine and dimethylformamide at 50°C for 20 hours. Compound RADP was synthesized from 2', 3', 4'-triacetyl riboflavin and N,6',03'-triacetyl

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SHAPIRO, T. A., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul72,
pp 1634-1638

adenosine-5' - phosphate. The reaction was carried out in anhydrous pyridine at 20° C for five days in the presence of a ten-fold excess of N,N'-dicyclohexylcarbodiimide. It was found that reducing the number of phosphate groups in the flavin adenine dinucleotide molecule (from two to one) leads to a sharp reduction in the activity of RADP as a cofactor of D-amino acid oxidase. It was found that FADP has 18% of the coenzymatic activity of flavin adenine dinucleotide.

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173 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ALLO AND ISCALLOXAZINES. XXIV. SYNTHESIS OF 6,7-DIAMINOALLOXAZINE
AND NEW TETRACYCLIC SYSTEMS -U-
AUTHOR--(OS)-TULCHINSKAYA, L.S., KLEBANOVA, V.D., POLYAKOVA, N.A.,
DVORYAKISEVA, G.G., BEREZOVSKIY, V.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 868-73 B 1
DATE PUBLISHED-----7C
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON,
AMINE, FLUORESCENCE, UV LIGHT, IMIDAZOLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1183 STEP NO--UR/0079/70/040/004/0368/0873
CIRC ACCESSION NO--AP0128603
UNCLASSIFIED