

USSR

PETROVSKAYA, V. G. and BLINOVA, N. I., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 69-74

"pulmonary" model, quantitative keratoconjunctival test, and Formal model. Loss of the type-specific antigen by lactose-positive hybrids did not affect the virulence of the strains. Loss of the type-specific antigen by previously attenuated hybrids resulted in behavioral differences in the models studied compared with attenuated recombinations possessing the type-specific antigen. The authors concluded that type-specific antigens play a secondary role in the virulence of *S. flexneri* 2 a and that some still unknown factor is of decisive significance in this respect.

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1/2 013

TITLE--THE VIRULENCE OF SH. FLEXNERI HYBRIDS OBTAINED IN CROSSING WITH  
VARIOUS STRAINS OF E. COLI K-12 HFR -U-  
AUTHOR--(02)-PETROVSKAYA, V.G., LYCHEVA, T.A.

UNCLASSIFIED

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,  
PP 42-47  
DATE PUBLISHED-----70

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, SHIGELLA, STREPTOMYCIN, ANTIBIOTIC  
RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1994/0105

STEP NO--UR/0016/70/000/005/0042/0047

CIRC ACCESSION NO--AP0114501

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SUPPOSITION WAS PUT FORWARD AND DATA WERE PRESENTED POINTING TO THE PRESENCE OF ONE OF GENETIC LOCI ON THE CHROMOSOME OF SHIGELLA NEAR THE STREPTOMYCIN ZONE; THIS WAS ONE OF THE LOCI RESPONSIBLE FOR THE CAPACITY OF SHIGELLA TO INDUCE KERATOCONJUNCTIVITIS. A SUGGESTION BY S. FORMAL ET AL. (1965) ON THE EXISTENCE IN E. COLI OF ONE OF THE GENS NECESSARY FOR MANIFESTATION OF SHIGELLA VIRULENCE WAS CONFIRMED. IT WAS SHOWN THAT THIS ALLELIC HOMOLOGOUS GEN WAS BLOCKED IN E. COLI K-12 STRAINS RESISTANT TO STREPTOMYCIN. FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI AMN SSSR, MOSCOW.

UNCLASSIFIED

Acc. Nr: **AP 0036814**

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, Immunobiologii, 1970, Nr 1, pp 43-49

*№ 1/1970*

**INTERSPECIES EXCHANGE OF COLICINOGENIC FACTORS IN ENTEROBACTERIA IN VIVO**

Kudlay, D. G.; Petrovskaya, V. G.; Kiselev, R. N.

Possibility of interspecies exchange of colicinogenic factors in enterobacteria in (in the intestine of mice) was experimentally demonstrated between Shigellae and Escherichia and Salmonellae. When S. typhimurium cultures (natural for mice) were used there was seen a prolonged circulation of the originating colicinogenic variants, which were also isolated, along with the initial recipient strain, from the blood and organs of perished animals. The possibility of genetic exchange of cholcinogenic factors in enterobacteria under natural conditions should be taken into consideration in analyzing and assessing the epidemiological materials of the outbreaks of intestinal diseases with utilization of colicinogenicity and colicinosensitivity as genetic labels.

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VI

REEL/FRAME  
**19721731**

01/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--LUBRICANT -U-

AUTHOR--(05)--PASECHNIK, M.S., KAMINSKIY, N.A., OSEYKO, N.I., CHANIN, I.A.,  
PETROVSKIY, A.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,987

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL-PATENT, SURFACTANT, METALWORKING LUBRICANT, COLD  
WORKING, HOT WORKING, VEGETABLE OIL, ESTER

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3003/1805

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

CIRC ACCESSION NO--AA0130638

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0130638

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LUBRICANT FOR COLD AND HOT METAL WORKING WAS PREPD. FROM CORIANDER FATTY OIL BY HEAT TREATMENT AT 150-330DEGREES AND 5-500 MM AND MIXING WITH MINERAL OR VEGETABLE OIL OR WITH A SURFACTANT, SUCH AS A SYNTHETIC ESTER.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--03JUL70

TITLE--THE NONLINEAR FERROMAGNETIC RESONANCE IN ANISOTROPIC FERRIT  
ELLIFSCID -L-

AUTHOR--PETROVSKIY, A.B.

COUNTRY OF INFO--USSR

SOURCE--TECFETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 2, PP  
254-264

DATE PUBLISHED--70

125/17

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MATHEMATIC ANALYSIS, FERRITE, FERROMAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1578/1159

STEP AC--UR/C646/70/002/002/0254/0264

CIRC ACCESSION AC--AF0046122

Acc. Nr: AP0046122

Ref. Code: UR 0646

PRIMARY SOURCE: Teoreticheskaya i Matematicheskaya Fizika, 1970,  
Vol 2, Nr 2, pp 254-264

THE NONLINEAR FERROMAGNETIC RESONANCE  
IN ANISOTROPIC FERRIT ELLIPSOID

Petrovskiy, A. B.

The nonlinear equation of the magnetization vector motion for a small ferrit ellipsoid, possessing crystalline anisotropy, is solved by Bogoliubov asymptotical method. It is shown that in the case of the uniform precession with frequency  $\omega$  the existence of resonances at frequencies  $\omega \approx \nu/q$  ( $q = 1, 2, 3, 4, 5$ ) and  $\omega \approx 2\nu$  ( $\nu$  being radio frequency) is possible.

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REEL/FRAME  
19781199

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UDC 621.371

PETROVSKIY, A. D., SMIRNOVA, L. V., and TOMILIN, V. K.

"Results of the Physical Modeling of Radio Wave Propagation in a Conducting Medium Using Screens"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 6 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 6--collection of works) "Nauka," 1972, pp 59-63 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A391)

Translation: The investigation was conducted by the method of physical modeling, based on the principle of electrodynamic analogy. A reservoir filled with a solution of NaCl was used as the model. The antenna feeder devices were made in the form of symmetrical half-wave vibrators; the screens were imitated by aluminum plates. The screening coefficient was obtained in terms of the geometric configuration of the screen. One illustration, bibliography of four. N. S.

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KLEMENT'YEV, A. A., MASLOV, Ye. P., PETROVSKIY, A. M., YASHIN, A. I.

"Control of Stochastic Processes with Adjustable Duration of the Test Interval"

Tr. IV Vses. Soveshch. po Avtomat. upr., 1968. Teoriya Avtomat. upr. [Works of Fourth All-Union Conference on Automatic Control, 1968. The Theory of Automatic Control], Moscow, Nauka Press, 1972, pp 226-236, Discussion 256-262 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V282 by the authors).

Translation: The problem is solved of synthesis of an optimal testing and control algorithm for a discrete random process with incomplete information. Three types of losses are defined: to deviation of the controlled process  $\{\eta_n\}$  from the assigned mode  $\{\theta_n\}$ ; to control of the process  $\{\eta_n\}$ ; to testing of the process  $\{\eta_n\}$ . Suppose the number of cycles of existence of process  $\{\eta_n\}$  is finite and equal to  $N$ . As a result of the operations of testing and control, and also the mismatch in coordinate  $y$  and  $\theta_n$ ,  $n = 1, 2, \dots, N$ , summary random losses  $C$  arise. The mathematical expectation of the value of  $C$  is minimized by selecting the  $1/2$

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KLEMENT'YEV, A. A., MASLOV, Ye. P., et. al., Tr. IV Vses. Soveshch. po Avtomat. upr., 1968. Teoriya Avtomat. upr., Moscow, Nauka Press, 1972, pp 226-236, Discussion 256-262.

number and placement of moments of testing and control, and also by selecting control  $u_k$ ,  $k = 1, 2, \dots$ . The problem is solved by methods of dynamic programming.

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Logic & Game Theory

USSR

UDC: 62-501.7:518.9

ABRAMYANTS, T. -G., VOLKOVINSKIY, M. I., MASLOV, Ye. P., and  
PETROVSKIY, A. N., Moscow

"Tracking Game on a Plane With a Limited Number of Tracking  
Trajectory Corrections"

Moscow, Avtomatika i Telemekhanika, No 7, 1972, pp 31-39

Abstract: The purpose of this paper is to analyze a differential tracking game on a plane for a limited number of tracking trajectory corrections. The game is played by having two participants, a pursuer and an evader, moving as points on a plane. The pursuer uses piece-wise programmed control, with shifts from one control law to another at a particular moment, the number of such shifts being finite. The trajectory corrections are defined as the transitions from one program to the other. It is assumed that the players have simple types of motion, with the velocity of the pursuer exceeding that of the evader. Solutions for the game are sought on the basis of a combination of classical calculus of variations and dynamic programming.

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USSR

UDC 539.3:534.1

NOVICHKOV, YU. N. and PETROVSKIY, A. V. (Moscow)

"The Stability of Multilayer Elastic Shells"

Moscow, Mekhanika Tverdogo Tela, No 5, 1973, pp 54-61

Abstract: Equations of neutral equilibrium are derived for multilayer elastic shells. The local stability loss of multilayer round cylindrical shells is investigated for axial compression and external uniform pressure. The spectra of bifurcational values of the loads are found for both kinds of loading, and their relationship to the wave number in the longitudinal direction and to the number of waves in the circumferential direction is studied. An analysis is made of the change of the nature of the loss of stability in relation to change of the elastic properties of the shell layers. 5 figures. 12 references.

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USSR

UDC: 53.082.4

KOLDASOV, G. D., PETROVSKIY, B. S., Leningrad Institute of Aviation Instrument Building

"A Method of Measuring Mechanical Stresses"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 364841, Division G, filed 31 Dec 70, published 28 Dec 72, p 121

Translation: This Author's Certificate introduces a method of measuring mechanical stresses in ferromagnetic solids by setting up ultrasonic vibrations and measuring the amplitude of the electric signal of a noncontact magnetoelastic induction pickup in the object to be inspected. As a distinguishing feature of the patent, provision is made for measuring dynamic mechanical stresses from the action of the ultrasonic waves. The test object is subjected to the localized action of alternating heteropolar pulses of an external magnetic field with amplitudes which produce a zero electric signal. The object is then subjected to the simultaneous action of an ultrasonic wave which induces the mechanical stresses to be checked, and an external magnetizing pulse chosen to be shorter than the duration

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KOLDASOV, G. D., PETROVSKIY, B. S., USSR Author's Certificate No 364841

of action of the ultrasonic wave. After this, ultrasonic vibrations are set up in the object to be inspected and the amplitude of the electric signal is measured to determine the mechanical stresses. The patent also covers a modification of this procedure distinguished by the fact that measurement accuracy is improved by choosing the length of the localized zone in which mechanical stresses are determined so that it is less than half the wavelength of the ultrasound which induces these stresses.

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UDC 681.327.66'13:53.088.7

YESIKOV, V. B., KOLDASOV, G. D., and PETROVSKIY, B. S., Leningrad Institute of Aviation Machine Building

"A Device for Investigating the Reciprocal Effect of Signals Transcribed on Ferromagnetic Material"

USSR Author's Certificate No 281540, Filed 17 Feb 69, Published 18 Jan 71 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B123 P)

Translation: There is a well-known device for investigating the reciprocal effect of signals transcribed on ferromagnetic material. It consists of pulse generators, amplifiers [y-ley], power sources, magnetization coils, and read-out coils. The purpose of the present invention is to simplify the hardware of this device; to simplify the methods used to measure, for research purposes, the effect which all the surrounding elements have on a selected element; and to regulate the forces acting on this element. This is achieved in the following way: the part of the ferromagnetic material that is not used for storage is covered with coils connected to the mechanical-wave activator, while the part of the ferromagnetic material that is used for storage is covered with active magnetizing and read-out coils.

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PETROVSKIY, B.V.

So: JPRS 55038  
27 JAN 72

DISCUSSION OF THE REPORT DELIVERED BY B.V. PETROVSKIY, USSR MINISTER OF HEALTH  
Article: Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 12, 1971, pp 54-64

P.K. Anshin (Moscow) stated that the further development of the preventive direction in medicine outlined in the directives of the 24th Party Congress requires investigation of compensatory mechanisms for a normal healthy physical condition. In spite of the thousands of factors that have different effects on the body's functional systems, i.e. investigation of mechanisms, processes, that maintain all systems of the organism on an optimum level. Yet, at the present time, the attention of physicians is usually concentrated on investigation of the end process and ultimate stage of a disease, for example, myocardial infarction, serious vascular pathology, etc. It is much more important to investigate the genesis of an illness, to find the mechanisms with which this process, which ends tragically for man, begins. We must find the causes and mechanisms that limit exogenous perturbation and do not allow man to become sick. In essence, we know much less about why we are normal than why we get sick. For physiology today, the question as to how a normal state is maintained is a central issue.

It is only by studying the mechanisms which resist deviations that proper understanding can be gained of the aspects of the organism at the time of exposure to "aggressive factors" and what measures are needed to provide compensation of its functions.

In conclusion, as an example of investigations that bring us closer to determining the causes and prevention of early stages of disease, P.K. Anshin cited data on the study of the mechanisms of regulation of cardiovascular system function.

P.M. Izrael (Moscow) discussed prevention of cardiovascular disease which is the concern not only of public health agencies but also of the entire government, and which is based on general state reserves. The latter include augmentation of further raising the material and cultural standard of living stipulated in the Directives of the 24th Congress of the CPSU; increased income per person, decreased use of heavy and unskilled labor in all branches

Surgery

USSR

UDC 616.132+616.13]-89.28-07:616.151.5-07

PETROVSKIY, B. V., KNYAZEV, M. D., KOBLOV, L. F., STEPANOV, G. A., and SMIRNOVA, L. A., Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Hemostasis After Repair Operations on the Aorta and Major Arteries Using Electroconductive Prostheses"

Moscow, Kardiologiya, No 4, 1971, pp 9-14

Abstract: Vascular prostheses woven with silver threads were implanted in 30 patients with occlusion (due to atherosclerosis and endarteritis) of the terminal portion of the aorta and iliac arteries or aneurysms of the aorta). A like number of patients with similar lesions received nonconducting terylene prostheses. Hypercoagulability was characteristic of both groups of patients before surgery because of high fibrinogen concentration, lowered fibrinolytic activity, increased antifibrinolysin activity, and slow blood flow. Postoperatively, none of the patients who received an electroconductive prosthesis required anticoagulant and fibrinolytic therapy, whereas most of those who received a terylene prosthesis showed signs of hypercoagulability, and several developed thrombosis despite the administration of anticoagulants.

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UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--PEOPLE'S HEALTH IS PUBLIC HEALTH -U-

AUTHOR--~~PETROVSKIY, B. V.~~ *P*

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA, 21 JUNE 70, P 3

DATE PUBLISHED--21JUN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PUBLIC HEALTH, KIDNEY, ORGAN TRANSPLANT, HEART DISEASE,  
TRAUMATOLOGY, ALLERGIC DISEASE, MEDICAL FACILITY, RESPIRATORY SYSTEM  
DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605037/C07 STEP NO--UR/9003/70/000/000/0003/0003

CIRC ACCESSION NO--AN0142452

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142452

ABSTRACT/EXTRACT--(U) GP-2- ABSTRACT. THIS IS THE MOTTO OF THE MEDICAL WORKERS' HOLIDAY. TIME AND AGAIN VLADIMIR ILICH LENIN STRESSED THAT OUR SOCIETY'S MOST VALUABLE PROPERTY IS PEOPLE WHO LIVE A FULL WORKING AND SPIRITUAL LIFE. AND HEALTH IS THE SINE QUA NON OF SUCH A LIFE. FOLLOWING THE BEHESTS OF THE GREAT LEADER, THE SOVIET GOVERNMENT IS DOING ALL IT CAN TO PRESERVE AND STRENGTHEN THE PEOPLE'S HEALTH AND TO INSURE THE TREATMENT AND RAPID RECOVERY OF THE SICK. THIS YEAR MEDICAL WORKERS DAY IS BEING CELEBRATED ON THE EVE OF AN EVENT OF PARTICULAR IMPORTANCE FOR MEDICAL WORKERS: ON 1 JULY THE PRINCIPLES OF USSR AND UNION REPUBLIC LEGISLATION ON THE HEALTH SERVICE, WHICH INCLUDE MORE THAN A HALF CENTURY OF EXPERIENCE OF THE SOCIALIST SYSTEM OF THE HEALTH SERVICE, AND WHICH HAVE BEEN SUPPLEMENTED AND APPROVED AS A RESULT OF NATIONWIDE DISCUSSION, COME INTO FORCE. ALL UNION REPUBLIC LEGISLATION MUST BE BROUGHT INTO LINE. THE CPSU CENTRAL COMMITTEE AND USSR COUNCIL OF MINISTERS RESOLUTION "ON MEASURES TO FURTHER IMPROVE THE HEALTH SERVICE AND DEVELOPMENT OF MEDICAL SCIENCE IN THE USSR," WHICH HAS BECOME A PROGRAM DOCUMENT FOR MEDICAL WORKERS, IS IMBUED WITH CONCERN FOR THE COUNTRY'S PUBLIC WEALTH, THE PEOPLE'S HEALTH. MUCH OF WHAT IT ENVISAGED HAS ALREADY BEEN DONE, AND IS NOW BEING DONE BY THE WORK OF DOCTORS AND HEALTH SERVICE ORGANIZERS. SEVEN CENTERS FOR KIDNEY TRANSPLANTS AND CHRONIC HEMODIALYSIS ARE NOW BEING CREATED IN THE USSR. THEY WILL HELP PEOPLE WITH SERIOUS KIDNEY DISEASES.

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PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142452

ABSTRACT/EXTRACT--REANIMATION CENTERS ARE CONTINUING TO BE FORMED IN LARGE CITIES, AND ANESTHESIOLOGY DEPARTMENTS WITH INTENSIVE TREATMENT AND REANIMATION WARDS, WHICH ARE PARTICULARLY IMPORTANT FOR SAVING THE LIVES OF PATIENTS WITH MYOCARDIAL INFARCTION, SERIOUS INJURIES, ACUTE POISONING, AND OTHER LESIONS OF VITALLY IMPORTANT ORGANS, CONTINUE TO BE FORMED IN LARGE HOSPITALS. A NETWORK OF CENTERS AND DEPARTMENTS TO HELP PATIENTS WITH SEVERE BURNS HAS BEEN ORGANIZED IN THE ALST TWO YEARS. THE USSR HEALTH MINISTRY RECENTLY ADOPTED A DECISION ON FURTHER DEVELOPING AND IMPROVING TRAUMATOLOGICAL AND ORTHOPEDIC AID. INDEPENDENT ORTHOPEDIC DEPARTMENTS FOR TREATING DISEASES AND DEFORMATIONS OF THE SKELETAL MUSCULATURE WILL SOON BE CREATED UNDER OBLAST, KRAY AND REPUBLIC HOSPITALS AND ALSO IN THE HOSPITALS OF LARGE INDUSTRIAL CENTERS. THE YEAR SINCE THE LAST MEDICAL WORKERS DAY HAS BEEN MARKED BY THE BIRTH OF TWO MORE VERY IMPROTANT HEALTH SERVICES. IT HAS BEEN DECIDED TO ORGANIZE ALLERGY CONSULTING ROOMS FOR THE SPECIALIZED TREATMENT OF PEOPLE SUFFERING FROM DISEASES OF AN ALLERGIC ORIGIN (BRONCHIAL ASTHMA, POLLINOSIS, AND OTHERS) IN THE CONSULTING POLYCLINICS OF OBLAST, KRAY, AND REPUBLIC MULTIDISCIPLINE HOSPITALS. THE MEDICAL GENETIC SERVICE, WHICH IS AIMED AT HEALTHY PROGENY IS ALSO EXTREMELY IMPORTANT. CONSULTATIVE MEDICAL GENETIC CLINICS MUST BE ORGANIZED IN ALL UNION REPUBLICS. ONLY BY IMPROVING SPECIALIZED MEDICAL AID CAN WE CURE PEOPLE WITH LATEST ACHIEVEMENTS OF MEDICINE. THE REFORM OF THE FIRST AID SERVICE HAS THE SAME AIMS. A NEW TYPE OF ESTABLISHMENT IS BEING CREATED IN THE COUNTRY: THE EMERGENCY HOSPITAL LINKED TO THE FIRST AID CENTER.

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PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142452

ABSTRACT/EXTRACT--HOSPITALS OF THIS SORT ARE WORKING IN PENZA, KISHINEV, DNEPRPETROVSK, RIGA, DUSHANBE, ORDZHONIKIDZE, KURGAN, YOSHKAR-OLA, NIKOLAYEV, ALMA-ATA, AND OTHER CITIES. THIS MAKES IT POSSIBLE TO BRING HIGHLY SKILLED, SPECIALIZED MEDICAL AID CLOSER TO THE POPULATION, AND ALSO GIVES FIRST AID DOCTORS THE OPPORTUNITY OF INCREASING THEIR QUALIFICATIONS. WORK IN ORGANIZING FIRST AID AND "EMERGENCY" ASSISTANCE MUST BE CONTINUED IN OTHER CITIES. THE NETWORK OF THERAPEUTIC PREVENTIVE ESTABLISHMENTS IS ALSO GROWING. OVER THE PAST TWO YEARS 45 LARGE HOSPITALS, 30 POLYCLINICS, AND A NUMBER OF SCIENTIFIC RESEARCH INSTITUTES HAVE BEEN BUILT. THE MINISTRY OF HEALTH HAS FORMULATED A LONG TERM PROGNOSIS OF THIS NETWORK'S FUTURE DEVELOPMENT. BUT HERE IT MUST BE STRESSED THAT THE SITUATION CONCERNING THE CONSTRUCTION OF MEDICAL UNITS REMAINS STRAINED: FREQUENTLY CONSTRUCTION PLANS FALL THROUGH, AND ONE COULD WISH FOR AN IMPROVEMENT IN QUALITY. ONLY THE MOST ACTIVE PARTICIPATION IN RESOLVING THIS PROBLEM OF THE LOCAL SOVIET AND LEADERS OF MINISTRIES, DEPARTMENTS, ENTERPRISES, KOLJHOZES, SOVKHOZES, AND TRADE UNION ORGANIZATIONS, WITH THE PUBLIC'S ACTIVE PARTICIPATION, WILL ENSURE THE TIMELY AND HIGH QUALITY CONSTRUCTION OF THERAPEUTIC PREVENTIVE ESTABLISHMENTS. WE ARE VERY MUCH COUNTING ON SUCH SUPPORT. THE MAIN CENTER OF SPECIALIZED MEDICAL AID IN THE COUNTRYSIDE IS THE RAYON HOSPITAL. IT MUST BE WELL EQUIPPED AND PROVIDED WITH SKILLED PERSONNEL. THIS CAN ONLY BE ACHIEVED BY ENLARGING THE CENTRAL RAYON HOSPITALS AND REORGANIZING SMALL DISTRICT HOSPITALS INTO MEDICAL POLYCLINICS AND OUTPATIENT CLINICS.

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PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142452

ABSTRACT/EXTRACT--WORK OF THIS SORT IS BEING SUCCESSFULLY CARRIED OUT IN GEORGIA, LITHUANIA, THE UKRAINE, AND A NUMBER OF RUSSIAN UBLASTS. THE LITHUANIAN SSR UKMERGE CENTRAL RAYON HOSPITAL AND THE BOGODUKHOV CENTRAL RAYON HOSPITAL IN THE UKRAINE CAN BE TERMED SCHOOLS OF ADVANCED TRAINING IN THE RURAL HEALTH SERVICE. HEALTH SERVICE ORGANIZERS MUST IMITATE THEIR EXPERIENCE MORE ACTIVELY AND POSE THE QUESTION OF THE REORGANIZATION OF THE HEALTH SERVICE IN THE COUNTRYSIDE MORE DECISIVELY. HERE MUCH DEPENDS ON THE CORRECT STANDPOINT OF THE LOCAL SOVIETS OF WORKING PEOPLE'S DEPUTIES. MEDICAL WORKERS EXPECT ACTIVE, EFFECTIVE HELP FROM THEM. LARGE RESERVES FOR IMPROVING THE HEALTH SERVICE ARE CONTAINED IN THE RATIONAL ORGANIZATION OF THE WORK OF EVERY MEDICAL ESTABLISHMENT AND EVERY MEDICAL WORKER. THERE ARE ALREADY A CONSIDERABLE NUMBER OF HOSPITALS AND POLYCLINICS IN WHICH THE PLACING AND USE OF MEDICAL PERSONNEL IS BEING IMPROVED, AND WHERE DOCTORS ARE BEING RELEASED FROM WORK WHICH IS NOT NATURAL FOR THEM, HANDING CERTAIN JOBS OVER TO MIDDLE GRADE MEDICAL PERSONNEL. AND THIS IS HAVING A PRONOUNCED EFFECT ON THE QUALITY OF MEDICAL AID. AN EXPERIMENT WHICH TOOK PLACE OVER TWO AND A HALF YEARS AGO IN 26 OF THE COUNTRY'S MEDICAL ESTABLISHMENTS IS EXTREMELY INTERESTING. NEW PRINCIPLES OF PLANNING, FINANCING AND ECONOMIC INCENTIVE WERE INTRODUCED IN THESE ESTABLISHMENTS, AS THEY WERE IN MANY BRANCHES OF THE NATIONAL ECONOMY. THE CHIEF DOCTOR ACQUIRED BROAD RIGHTS IN THE USE OF BUDGET ALLOCATIONS, MATERIAL RESOURCES, AND THE PLACING OF PERSONNEL.

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142452

ABSTRACT/EXTRACT--THE ASSETS WHICH WERE WAVED WERE PUT INTO THE ESTABLISHMENT FUND, AND UP TO 70 PERCENT OF THE FUNDS WERE USED FOR AWARDED BONUSES TO THE WORKERS, AND 30 PERCENT FOR IMPROVING THEIR SOCIAL AND LIVING CONDITIONS AND FOR ACQUIRING MEDICAL EQUIPMENT AND MEDICINES. THE SUM TOTAL OF THE FUND FORMED THROUGHOUT ALL ESTABLISHMENTS TAKING PART IN THE EXPERIMENT AMOUNTED TO 2.9 MILLION RUBLES. AS A RESULT OF THE EXPERIMENT, THE NUMBER OF DAYS HOSPITAL BEDS ARE IN USE HAS INCREASED, AND GROUPS OF WORKERS HAVE BEEN RELEASED. THUS, BECAUSE OF THE ADDITIONAL RESERVES, DEPARTMENTS FOR TREATING PATIENTS WITH LUNG DISEASES AND DEPARTMENTS OF INTENSIVE THERAPY AND REANIMATION HAVE BEEN ORGANIZED, AND BEDS HAVE BEEN ALLOCATED FOR PATIENTS WITH KIDNEY DISEASE AND GASTROINTESTINAL DISORDERS IN THE LENINGRAD DBLAST HOSPITAL. IN THE POLYCLINIC OF THE KISHINEV CITY HOSPITAL NO 2, CLINICS HAVE BEEN CREATED FOR TREATING SUFFERERS FROM GASTROINTESTINAL DISEASES, GLAUCOMA, AND OTHER ILLNESSES. AN INTERCOM SYSTEM HAS BEEN INSTALLED AND A DICTAPHONE CENTER HAS BEEN ASSEMBLED IN THE VYSHNEVLOTSKIY CENTRAL RAYON HOSPITAL, IN THE POLYCLINIC. THE RESULTS OF THE EXPERIMENT ARE UNDOUBTEDLY POSITIVE, AND THE EXPERIMENT ITSELF NEEDS TO BE DEVELOPED.

UNCLASSIFIED



Hematology

USSR

PETROVSKIY, B. V., Academician, Minister of Health USSR

"Transfusion Science in Surgery"

Moscow, Nauka i Zhizn', No 2, Feb 70, pp 18-20

Abstract: Serious complications often result from surgery that requires massive blood transfusions. Among the steps taken by Soviet surgeons to prevent these complications are transfusion of only whole bank blood which has been stored no more than 1 to 3 days and which is used during operations, together with low-molecular-weight blood substitutes such as the Soviet polyglucinrheopolyglucin and the foreign rheomacrodex, periston, and others. The Swedish rheomacrodex, a low-molecular-weight plasma substitute, has a beneficial effect on capillary circulation and on the coagulation system. It also appears to have some value in preventing thrombosis. Concentrated albumen prepared from placental serum has been successfully tested on 120 patients suffering from liver, cardiovascular, and lung diseases as a means of controlling shock during an operation and afterwards. Other new preparations obtained from blood by Soviet scientists are immune gamma-globulins, e.g., specific anti-influenza polyglobulin (obtained from the serum of donors  
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PETROVSKIY, B. V., Nauka i Zhizn', No 2, Feb 70, pp 18-20

inoculated with influenza vaccine, specific antitetanus polyglobulin, and  
antistaphylococcus gamma-globulin (now undergoing clinical trials).

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Hematology

USSR

UDC: 617-085.38

PETROVSKIY, B.V.

"Advances in the Use of Blood Transfusions in Surgery"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 2, 1970, pp 3-8

Abstract: The complications following massive blood transfusions may be classified as follows: (i) cardiovascular disorders (vascular collapse, asystole, bradycardia, cardiac arrest, ventricular fibrillation); (ii) changes in the blood (shift to acid pH, hypocalcemia, increased viscosity, hypochromic anemia with leukopenia and thrombopenia, decrease in content of gamma globulin and albumin); (iii) impairment of hemostasis (spasm of the peripheral vessels, bleeding of the wound, fibrinogenopenia, hypoprothrombinemia, each of accelerator globulin, each of convertin, thrombopenia, increased fibrinolytic activity); (iv) complications in the viscera (petechial hemorrhages, hemorrhages from the renal vessels and intestine, hepatic-renal insufficiency - oliguria, anuria, jaundice, increased blood bilirubin); (v) lowered immunobiological activity of the recipient (decrease in titer of agglutinating antibodies, separation of sutures in surgical wound, poor healing of the wound, sluggish and protracted postoperative period). Various prophylactic and therapeutic measures used before, during, and after surgery performed at the Research Institute of Clinical and Experimental Surgery, USSR Ministry of Health, are described.

1/1

UNCLASSIFIED  
 TITLE--A NEW TECHNIQUE OF FORMING AN AUTOBIOLOGICAL LINING FOR THE  
 PREVENTION OF THROMBOGENESIS ON PROSTHESES OF THE CARDIOVASCULAR SYSTEM  
 AUTHOR--PETROVSKIY, R.V., SHUMAKOV, V.I., STEPANOV, G.A., PLOTKIN, L.L.

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TOPIC TAGS--CARDIOVASCULAR SYSTEM, PROSTHESIS, THROMBOSIS

CONTROL MARKING--NO RESTRICTIONS

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PRIMARY SOURCE: Khirurgiya, 1970, Nr 1, pp 69-74

A NEW TECHNIQUE OF FORMING AN AUTOBIOLOGICAL  
LINING FOR THE PREVENTION OF THROMBOGENESIS  
ON PROSTHESES OF THE CARDIOVASCULAR SYSTEM

B. V. Petrovskiy, V. I. Shumakov, G. A. Stepanov, L. L. Plotkin

The authors propose a new technique of forming an autobiological lining on prostheses of the cardiovascular system, which consists in that on the electroconducting prosthesis in vitro and in the blood flow a positive electric potential is given, conducive to a rapid precipitation of trace elements and proteins of the blood. On the prosthesis there is formed a firmly-bound autobiological lining preventing the formation of thrombi. The authors conducted 52 experiments in vitro and 30 acute experiments with introduction of an electric potential on the prosthesis in the blood stream. The article contains a detailed description of the technique of forming the lining, as well as the method of recording of the autobiological lining. The biochemical and morphological composition of the lining formed by the galvanic technique was studied.

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REEL/FRAME  
19771711

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USSR

UDC 510

PETROWS'KYY, G. I.

"Gnoseological Aspect of Mathematical Probability"

Filos. probl. suchasn. pryrodozn. Mizhvid. nauk. zb. (Philosophical Problems in Modern Natural Science. Interdepartmental Collection of Scientific Works). 1971, vyp 24, pp 95-100 (Ukrainian; Russian summary) (from RZh-Matematika, No 2 Feb 72, Abstract No 2A9 from author's summary)

Translation: A criticism is given of philosophical conceptions which reduce probability to a measure of the necessity of possibilities. Citing the concepts of mathematicians, the author notes that probability expresses only a numerical, quantitative characteristic of possibilities, while the role of qualitative measure is played by social expediency. The article also reveals the gnoseological aspect of three groups of mathematical probability definition.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--OPTICAL GLASS -U-

AUTHOR--(05)-NIKOLINA, G.P., KHALILEV, V.D., IVANOV, V.N., PETROVSKIY,  
G.T., TYLEVICH, F.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,030

REFERENCE--OTKRYTIYA, IZOBRET., PKCM. OBRAZTSY, TOYARNYE ZNAKI 1970,  
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL-PATENT, GLASS COMPOSITION, OPTIC GLASS, CALCIUM  
FLUORIDE, ALUMINUM FLUORIDE, BERYLIUM FLUORIDE, YTTRIUM, STRONTIUM  
COMPOUND, POTASSIUM COMPOUND, LANTHANUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3004/1803

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

CIRC ACCESSION NO--AA0132069

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO INCREASE MOISTURE RESISTANCE AND TRANSPARENCY IN THE 165-5000 MMU LONG WAVE RANGE, AS WELL AS TO DECREASE THE CRYSTN. TENDENCY AND THE M.P., YF SUB3 5-12 MOLE PERCENT WAS ADDED TO OPTICAL GLASS CONSISTING OF: BEF SUB2 49-54, AIF SUB3 10-15, CAF SUB2 LESS THAN 12, SRF SUB2 LESS THAN 9, LAF SUB3 LESS THAN 3, AND KF 12-24 MOLE PERCENT. FACILITY: LENSIVET TECHNOLOGICAL INSTITUTE, LENINGRAD.

UNCLASSIFIED



USSR

UDC 621.316.722.1

MELESHKEVICH, M. F., and PETROVSKIY, I. I.

"Voltage Regulation With the Aid of Germanium Diodes With Negative Resistance"

Vestn. Belorus. un-ta (Bulletin of Belorussian University), 1970, Series I, No 3, pp 86-90 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B494)

Translation: The possibility is considered of voltage regulation with the aid of semiconductor diodes with negative resistance, and the conditions necessary for this. The results are described of an experimental test of the operation of a regulator using germanium semiconductor diodes, for voltage with both constant and periodically changing polarity. Conclusions are made concerning the possibility of their practical use. 3 ill. 1 tab. 3 ref. Author's Abstract.

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PETROVSKIY, K.

Dissertations

WHAT A DISSERTATION SHOULD BE LIKE

(Article by Professor K. Petrovskiy; Moscow, Nedra Publishing House, 19 May 1972, p. 3)

The relative proportion of dissertations in the total volume of scientific research in our country is rather large, and they doubtless play an important role in the development of science and they add much to practical matters.

However, the quality of dissertations does not always satisfy the basic requirements of scientific research (high level of theory, practical significance). This particularly relates to candidate dissertations.

A serious shortcoming in the development of young scientists is their one-sided training. Frequently, the entire erudition of a candidate of science, who has successfully defended his dissertation, is exhausted by his given topic. As a result, in obtaining preference for a high-ranking position, he turns out to be untrained for the position, both theoretically and practically. This lack of correspondence is most clearly manifested in clinical conditions.

Apparently, one should re-examine the way in which graduate students are accepted, where the graduate study must be preceded by solid practical work (internship, etc.). An exception to this might be made with respect to the theoretical disciplines where the most talented students, who are well known in a department and have made a good showing in the scientific circle, might enter graduate study immediately after graduation from their institute.

A particularly large role in the introduction of scientific achievements into practice belongs to doctoral dissertations.

We believe that nothing less should be expected of known doctors of science. A valuable doctoral dissertation can hardly be built on a barren place where there has been nothing of value in the scientific past.

USSR

UDC 613.21-057:612.766.2

PETROVSKIY, K. S., First Moscow Medical Institute imeni I. M. Sechenov

"A Balanced Diet Under Hypokinetic Conditions"

Moscow, Gigiyena i Sanitariya, No 4, 1973, pp 20-23

Abstract: The calorie value of proteins, fats, and carbohydrates in a diet suitable for those exposed to hypokinesia should be in a 1:2:3 ratio. Using the standard balanced unit of 1000 kcal (megacalorie) proposed by the author, a megacalorie would contain 164 protein, 328 fat, and 508 carbohydrate large calories or, in terms of weight, 40 g of protein, 35 g of fat, and 124 g of carbohydrates. A daily diet of 2 1/2 megacalories is best under hypokinetic conditions. It should include 410 kcal (100 g) of protein, 820 kcal (87 g) of fat, and 1270 kcal (310 g) of carbohydrates. Protein is particularly important because it is expended most intensively during hypokinesia owing to its rapid breakdown and elimination from the body. A table giving the protein content of various foods in g per 100 kcal can be used to determine the optimum protein level of a balanced diet with the minimum number of calories.

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USSR

UDC 613.2(02)

PETROVSKIY, K. S., Editor

Gigiyena Pitaniya (Nutrition Hygiene), Moscow, "Meditsina," 1971, 512 pp

Translation: Table of Contents (Partial)

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UDC 621.357.1.035(088.8)

NOVOSELOV, V. A., NELIDOV, V. B., MITROFANOV, V. S., ARCHAKOV, V. P.,  
EPEL'FEL'D, F. I., SOLOVEY, L. F., PETROVSKII, P. P.

"Device for Distribution of Amalgams"

USSR Author's Certificate No 295736, filed 30/09/69, published 8/04/71.  
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract  
No 4L245 from the resume).

Translation: A device is patented for distribution of amalgam in scrubber separators, consisting of a perforated grid with a circular tip, separating the upper plane of the grid into central and peripheral zones with apertures for distribution of the amalgam and output of hydrogen, differing in that in order to improve the flow of amalgam, eliminate wear of the fitting and prevent hydraulic shock, the apertures in the peripheral zone are made in the form of slits covered with a screen, while the apertures for passage of amalgam are located at the points of intersection of slots made on the lower plane of the grid and forming projections, preventing blockage of the apertures with granules of the packing.

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USSR

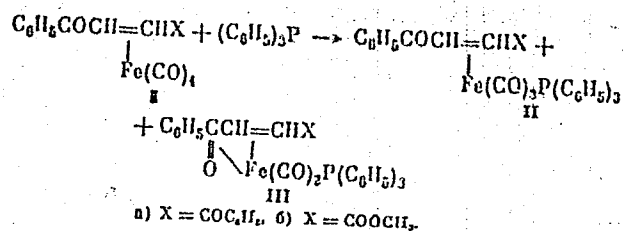
UDC 547.241

NESMEYANOV, A. N., RYBIN, L. V., GUBENKO, N. T., PETROVSKIY, P. V., and RYBINSKAYA, M. L., Institute of Elemental Organic Compounds Academy of Sciences USSR

"The Reaction of Triphenylphosphine with Iron Carbonyl Complexes of  $\beta$ -Substituted  $\alpha, \beta$ -Unsaturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2473-2477

Abstract: It was shown that the stability of the metal ligand bond in monoolefin  $\pi$  complexes of iron may be determined by the reaction of the complex with triphenylphosphine such as in the following reaction:

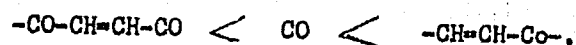


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USSR

NESMEYANOV, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2473-2477

The reaction of trans dibenzoylmethylene and trans methyl esters of  $\beta$ -benzoyl-acrylic acid with triphenylamine in methyl alcohol and heptane in room temperature and at heating to 60-70°C resulted in the replacement of the CO ligand with the formation of complexes II and III above. The order of increasing ease of substitutions of the ligands is



From this it can be seen that the relative ease of substitution increases with the increasing strength of the  $\pi$  acids. Structures were confirmed by IR and NMR spectra.

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USSR

UDC 547.241 + 547.62 + 547.442

MASTRYUKOVA, T. A., ALADZHEVA, I. M., PETROVSKIY, P. V., MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Organometallic Compounds

"Acidity and Tautomerism of beta-Ketophosphonium Salts. Tautomerism of Triphenyl(diacylmethyl)phosphonium Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 991-997

Abstract: According to the IR- and NMR-Spectroscopic data the salts of triphenyl(acetylbenzoylmethyl)-, triphenyl(acetylcarboethoxymethyl) and triphenyl(diacetylmethyl)phosphonium exist in the enole form; they are in the trans-enolic orientation with the protons of the hydroxyl groups being involved in intermolecular hydrogen bonding with the anions or the oxygen of the carbonyl groups. Triphenyl(dicarboethoxymethyl)phosphonium chloride exists in the dicarbonyl form.

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USSR

UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, Kh. A., PETROVSKIY, P. V., MATROSOV, Ye. I., and KABACHNIK, M. I., Institute of Metal-Organic Compounds, Acad. Sc., USSR

"Acidity and Tautomerism of  $\beta$ -Ketophosphonium Salts of 3,3,5,5-Tetraphenyl-3,5-diphosphoniumcyclohexanone"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-2625

Abstract: Synthetic methods have been developed for 3,3,5,5-tetraphenyl-3,5-disphosphoniumcyclohexanone (I) salts. Solutions of 1.52 g tetraphenylmethylenediphosphine and 0.86 g symm-dibromoacetone in 30 ml tetrahydrofuran were slowly added to 90 ml of boiling THF with stirring. A finely crystalline material was obtained and reprecipitated from hexane-ethanol to yield the dibromide of (I), m.p. 230-255°C. To obtain the dichloride of (I), m.p. 264-266, 4.69 g of symm-dichloroacetone in 150 ml acetonitrile was added to 14.19 g tetraphenylmethylenediphosphine in 950 ml acetonitrile, refluxed for 1.5 hr and cooled to precipitate the product. Sodium tetraphenylborate in absolute ethanol added to the dibromide of (I) in absolute ethanol at room temperature with stirring yields the tetraphenylborate of (I), m.p. 182-185°C. To obtain the diperchlorate of (I), 1/2

USSR

MASTRYUKOVA, T. A., et al., Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-2625

m.p. 202-204°C, an aqueous solution of sodium perchlorate was added to an aqueous solution of the dichloride of (I). The salts obtained have an enolic structure in the crystalline state; in solutions an enol-ketone equilibrium is established.

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USSR

UDC 541.632+538.113:661.718.1

MASTRYUKOVA, T. A., SHIPOV, A. E., VAYSBERG, M. S., PETROVSKIY, P. V., and KABACHNIK, M. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"PMR Study of Diastereoisomerism of Substituted O-Ethyl Methylthiophosphonates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, p 1841

Abstract: In compounds of the general formula  $\text{CH}_3(\text{C}_2\text{H}_5\text{O}(\text{P}(\text{S})\text{SCH}_2\text{C}(\text{O})\text{NHCH}(\text{R})-\text{COOH} [\text{R} = \text{H} (\text{I}), \text{CH}_3 (\text{II}) \text{ and } i\text{-C}_3\text{H}_7 (\text{III})]$ , (II) and (III) contain two asymmetric centers separated by five single bonds. Nevertheless, the PMR spectra of the resultant mixture of diastereomers clearly shows two doublet signals for the methyl protons corresponding to the two diastereomers. The difference in chemical shifts varies according to compound and solvent from 0.06 to 0.1 p.p.m., with the maximum for compound (III) in benzene. This difference is great for substances in which the asymmetric centers are far removed from each other. Thus, it is shown that diastereomerism can be found in the PMR spectra for molecules with separated asymmetric centers.  
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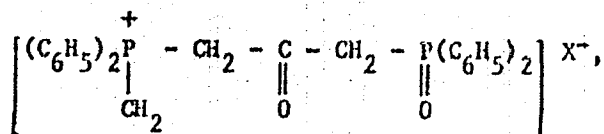
UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, KH. A., PETROVSKIY, P. V. MATROSOV, YE. I.,  
Academician KABACHNIK, M. I.

"Acidity and Tautomerism of Some  $\beta$ -Ketophosphonium Salts"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

Abstract: A study of diphenylphosphinyl-substituted  $\beta$ -ketophosphonium salts of the following structure:



where  $\text{X} = \text{Cl}^-$ ,  $\text{ClO}_4^-$ ,  $\text{BF}_4^-$ ,  $\text{BPh}_4^-$  and  $\text{CF}_3\text{COO}^-$  are anions was made to consider the problem of whether introduction of radicals increasing the CH-acidity but capable of the formation of hydrogen bonds with OH-radicals of enol forms into a molecule of acylphosphonium salt must lead to enolization. Paramagnetic resonance spectra and infrared spectra of the investigated salts are presented and analyzed. In contrast to simple  $\beta$ -ketophosphonium salts, their

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USSR

MASTRYUKOVA, T. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

diphenylphosphinyl-substituted derivatives are capable of enolization in solutions. This property cannot be explained only by the increase in CH-acidity as a result of introducing the diphenylphosphinyl radical. The cause of the enolizability lies in stabilization of the enol form under the effect of the diphenylphosphinyl group. In the case of complex anions enolization does not occur. Thus, for enolization both the P(O)-radical and  $CF_3COO^-$  or  $Cl^-$  anions must be present.

2/2



1/2 012  
UNCLASSIFIED  
PROCESSING DATE—30OCT70  
TITLE—IRON CARBONYLS AS INHIBITORS OF RADICAL CHAIN REACTIONS OF  
ORGANOSULFUR COMPOUNDS —U—  
AUTHOR—(05)—KANDROR, I.I., PETROVA, R.G., PETROVSKIY, P.V., TERENTYEV,  
A.B., FREYDLINA, R.KH.  
COUNTRY OF INFO—USSR  
SOURCE—DOKL. AKAD. NAUK SSSR 1970, 191(4), 835-8 (CHEM) P  
DATE PUBLISHED—70  
SUBJECT AREAS—CHEMISTRY  
TOPIC TAGS—IRON COMPOUND, CARBONYL COMPOUND, ORGANIC SULFUR COMPOUND,  
ALKENE, CHAIN REACTION  
CNTRL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAME—2000/0698  
CIRC ACCESSION NO—AT0124370  
STEP NO—UR/0020/70/191/004/0835/0838  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124370

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING MIXTS. OF UNSATD. SULFIDES AND PHS<sub>2</sub> WITH FE(CO) SUB<sub>5</sub> (1) 10.5 MOLE PERCENT) IN SEALED AMPULS AT 80DEGREES OR 150DEGREES 10 HR WAS USED AS THE TECHNIQUE FOR STUDYING THE EFFECT OF THE CARBONYL ADDITIVE ON THE REACTION. I INHIBITED THE RADICAL ADDN. OF PHS<sub>2</sub> TO THE OLEFINS. THE FOLLOWING PRODUCTS WERE OBTAINED FROM THE INDICATED OLEFINS IN THE PRESENCE (ABSENCE) OF I;

PHSCH=CH SUB<sub>2</sub> 100PERCENT MECH (SPH) SUB<sub>2</sub> (100PERCENT (PHSCH SUB<sub>2</sub>) SUB<sub>2</sub>);  
 PHSCPH=CH SUB<sub>2</sub> 100PERCENT MEC(SPH) SUB<sub>2</sub> PH (56PERCENT PHSCHPHCH SUB<sub>2</sub> SPH AND 27PERCENT MEC(SPH) SUB<sub>2</sub> PH); AND MEC(SPH) SUB<sub>2</sub> PH 100PERCENT MECH(SPH)PH; NO REACTION TOOK PLACE WITH OR WITHOUT FE(CO) SUB<sub>5</sub> WITH PHS<sub>2</sub> AND MECH(SPH) SUB<sub>2</sub>. FORMATION OF PHSCPHME ABOVE RESULTED FROM ADDN. OF PHS<sub>2</sub> IN ACCORD WITH THE MARKOVNIKOV RULE, AND CONVERSION OF THE MERCAPTAL INTO THE FINAL PRODUCT OCCURRED BY LOSS OF PHS RADICAL, WITH FE(CO) SUB<sub>5</sub> INHIBITING THE RADICAL ADDN. OF PHS<sub>2</sub> OT THE ORIGINAL OLEFINIC SULFIDE.

FACILITY: INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ORIENTING ACTION OF THE SULFO GROUP ON A CYCLOPENTADIENYLMANGANESE TRICARBONYL SYSTEM IN THE PROTOPHILIC ISOTOPIC EXCHANGE OF HYDROGEN -U-

AUTHOR--(05)-SETKINA, V.N., KISLYAKOVA, N.V., PETROVSKIY, P.V., KOLOBOVA, N.YE., KURSANOV, D.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 698-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MANGANESE COMPOUND, CARBONYL COMPOUND, CYCLIC GROUP, ISOTOPE EXCHANGE, SODIUM COMPOUND, SULFONIC ACID, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1905

STEP NO--UR/0062/70/000/003/0698/0699

CIRC ACCESSION NO--AP0123689

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123689

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

UNCLASSIFIED

USSR

UDC 547.558.1 (2)

MASTRYUKOVA, T. A., SUYERBAYEV, KH. A., FEDIN, E. I., PETROVSKIY, P. V.,  
MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Metal Organic Compounds,  
Acad. Sc. USSR

"Diphosphacyclohexadienone"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1195

Abstract: 3,3,5,5-Tetraphenyl-3,5-diphosphacyclohexadienone, m.p. 188.5-192°, was synthesized by the reaction of 3,3,5,5-tetraphenyl-3,5-diphosphoniacyclohexanone with triethylamine. On the basis of IR and NMR  $^{31}\text{P}$  data it appeared that the new compound exists as diphosphacyclodienone substituted at the phosphorus atom; there were no indications of the existence of diphosphaphenolic structure.

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USSR

UDC 536.421.4+536.421.1

SEMENCHENKO, V. K., and PETROVSKIY, V. A.

"Kinetics of Crystallization Center Generation"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations -- collection of works), Minsk, "Nauka i tekhn." 1971, pp 54-61 (from RZh-Fizika, No 9, 1971, Abstract No 9E373)

Translation: The authors present a microscopic theory of the kinetics of the homogeneous generation of crystallization centers, in which the form and anisotropy of the crystalline seed are taken into account. A kinetic equation for the nonstationary formation of crystalline seeds is derived. The equilibrium concentration is found for crystalline critical seeds formed in a real solution, melt, or vapor. A formula is obtained for the rate of stationary generation of crystallization centers. It is shown that the anisotropy of the surface tension in the crystalline phase has no effect on the kinetics of this process. Author's abstract.

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USSR

UDC 621.382.2

GASANOV, L.S., LESNEVOY, A.S., PETROVSKIY, V.I.

"Study Of Voltage-Capacitance Characteristics Of Amorphous Structures Based On Glassy Semiconductors"

Elektron.tekhnika. Nauch.-tekhn.sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, No 5(29), pp 31-34 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 28164)

Translation: The low-signal capacitance is experimentally investigated of amorphous structures based on chalcogenide glass of the systems As-Te-Si-Ge, Si-Te, Ge-Te, and some glassy semiconductors of type  $A^{II}B^{IV}C_2$ . It is revealed that during stresses, the capacitance of such structures becomes negative. A strong dependence is shown of the negative capacitance on the temperature and the frequency of the signal measured. Summary.

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USSR

UDC 621.378.33.016.35

BASHKIN, A. S., PELENOV, E. M., GORCHUKOV, S. A., GRAYVICHNYI, A. I.,  
PETROVSKII, V. H., PROSEKHO, Ye. D.

"Stabilizing the Frequency of Gas Laser Emission by the Method of Comparison With a Radio Frequency"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 40-49

Abstract: The authors study the intermode spacing as a function of various parameters of a laser on a wavelength of 0.63  $\mu$  operating under conditions of emission of three or more axial modes. It is proposed that certain properties of the frequency characteristics be used to stabilize the emission frequency of a gas laser by the method of comparing the intermode spacing with a radio frequency. The resultant experimental data are theoretically verified for the case of emission of three axial modes in the region of symmetric lasing. It is shown how a stabilized gas laser can be made with a relative long-term frequency stability exceeding the results which have been attained up to the present time. The absolute frequency stability of such a laser (assuming high relative stability for long time intervals) will be determined by the displacement of the center of the line of the atomic transition due to various factors.

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USSR

UDC 621.373:930.145.6

BASHKIN, A. B., MELNIKOV, E. M., GONCHUKOV, S. A., ORAYEVSKIY, A. N.,  
PETROVSKIY, V. N., PROTSENKO, Ye. D.

"Stabilizing the Emission Frequency of a Gas Laser by the Method of Comparison With a Radio Frequency"

V sb. Kvant. elektronika (Quantum Electronics--collection of works),  
No 2, Moscow, 1971, pp 40-45 (from Elektronika, No 7, Jul 71,  
Abstract No YD117)

Translation: The authors study intermode spacing as a function of various laser parameters for a laser operating on a wavelength of 0.63 micron emitting three or two axial modes. It is proposed that certain properties of the frequency responses be used for stabilizing the emission frequency of a gas laser by the method of comparison of the intermode spacing with a radio frequency. A theoretical study is made of the results of experimental data for the case of emission of three axial modes in the region of symmetric tuning. It is shown that a stabilized gas laser can be used with relatively long-term frequency stabilization, surpassing the results which have been achieved up to the present time. The absolute frequency stability of such a laser (in the case of high relative stability for long time intervals) will be determined by the

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USSR

BASHKIN, A. S., et al., Kvant. elektronika (Quantum Electronics--collection of works), No 2, Moscow, 1971, pp 40-48 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D117)

shift in the center of the line of the atomic transition as a consequence of various factors. Six illustrations, bibliography of four titles.

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USSR

UDC 621.438-251:536.24.001.24

PETROVSKIY, V. S., TSAPLIN, M. I.

"Boundary Conditions in Heat Conductivity Problems for Gas Turbine Rotors"

Tr. Mosk. aviats. tekhnol. in-ta (Works of Moscow Aviation Technological Institute), 1971, No. 72, pp 5-19 (from RZh-Turbostroyeniye, No 8, Aug 71, Abstract No 8.49.96)

Translation: The forms of boundary conditions encountered in formulating heat conductivity problems for gas turbine rotors do not always correspond to actual conditions. The data presented provides some foundation for assuming that in certain cases one should solve the heat conductivity problem for the disc and blade simultaneously. This is feasible when data on the preliminary gasdynamic calculation of the flow portion of the turbine and the gasdynamic calculation of the cooling of the rotor are the only initial data for calculating the temperature state of the rotor. 5 ill., 3 ref.

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- 150 -

USSR

UDC 619:616.995.42+636.2+636.52/.58

PETROVSKIY, V. V.

"Level of Content and Duration of Excretion of Sevin in the Milk of Cows Treated Against Ixodes"

Kiev, V sb. Gigiyena Primeneniya, Toksikol. Pestitsidov i Klinika Otrayl (Hygiene of the Use and Toxicology of Pesticides and the Clinical Treatment of Intoxication -- Collection of Works), No 8, 1970, pp 193-196 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.709)

[No abstract\_7

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USSR

UDC 619:614.31+637.128.614.449.542

PETROVSKIY V. V., Candidate of Veterinary Sciences, All Union Institute of Experimental Veterinary Medicine

"Concentration of Sevin and Duration of Its Secretion in Cow's Milk"

Moscow, Veterinariya, No 8, Aug 70, pp 39-40

Abstract: The milk of cows treated with acaricides must not contain any pesticide residues. Since this regulation also applies to sevin, the physiological effects of sevin on cows and calves were investigated. It was found that 0.85-1.0% sevin suspensions induced no hematological or biochemical shifts in cattle blood. Sevin can therefore be recommended in these concentrations for the treatment of calves against ticks, at intervals of 7 days. When milch cows are treated with a 0.85% sevin suspension, their milk may contain sevin in a maximum concentration of 0.1-0.3 mg/liter on the 1st day after treatment, following which it rapidly diminishes. The greater the milk output, the smaller is the concentration of sevin residues. To prevent the appearance of sevin in milk, it is recommended that cows be treated with a mixture of 0.4-0.5% sevin and 0.4-0.5 percent dicresyl. This mixture is as effective as a 1% sevin suspension or a 1% dicresyl emulsion.

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1/2 013  
UNCLASSIFIED  
TITLE--ACARICIDE NATURE OF DICRESYL FOR CATTLE TICKS -U-  
PROCESSING DATE--30OCT70  
AUTHOR--(02)--PETROVSKIY, V.V., RODIN, S.D.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 118-19  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ACARICIDE, TICK, CARBAMATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1689  
CIRC ACCESSION NO--AP0125310  
STEP NO--UR/0394/70/008/002/0118/0119  
UNCLASSIFIED

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2/2 013

UNCLASSIFIED

PROCESSING DATE--30UCT70

CIRC ACCESSION NO--AP0125310

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

ABSTRACT. DICRESYL (A MIXT. OF M AND P-CRESYL N-METHYLCARBAMATES) WAS INEFFECTIVE ON CATTLE AGAINST TICKS (HYALOMMA ANATOLICUM, H. DETRITUM, H. PLUMBEUM, RHIPICEPHALUS BURSA, AND BOOPHILUS CALCARATUS).

FACILITY: VSES. INST. EKSP. VET., USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

1/2 014

TITLE--CHARACTER OF CHEMICAL BONDS IN A VANADYL COMPLEX FOR SOME OXIDE GLASSES STUDIED FROM PARAMAGNETIC RESONANCE AND ELECTRON ABSORPTION  
AUTHOR--(05)-BUGOMOLOVA, L.D., DOLGOLENKO, T.F., LAZUKIN, V.N., NOZORINA, YE.N., PPETROVYKH, N.V.  
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 54-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--VANADIUM COMPLEX, OXIDE GLASS, EPR SPECTRUM, MOLECULAR ORBITAL, GLASS COMPOSITION, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1993/0505

STEP NO--UR/0020/70/191/001/0054/0057

CIRC ACCESSION NO--AT0113396  
UNCLASSIFIED



2/2 014

UNCLASSIFIED

PROCESSING DATE--160CT70

CIRC ACCESSION NO--AT0113396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON ABSORPTION AND EPR SPECTRA OF VO PRIME2 POSITIVE IN B SUB2 O SUB3 NEGATIVE BAD MINUS V SUB2 O SUB5, SID SUB2 MINUS BAD MINUS V SUB2 O SUB5, AND P SUB2 O SUB5 MINUS BAD MINUS V SUB2 O SUB5 GLASSES (CONTG. 1-5 PERCENT V SUB2 O SUB5) WERE MEASURED AT LIQ.-N TEMPS. AS A FUNCTION OF THE GLASS COMPN. THE NEW EXPTL. DATA AND THE EARLIER PUBLISHED DATA ON THE EPR SPECTRA OF V GLASSES (B., ET AL. 1967) WERE INTERPRETED WITHIN THE MO THEORY. THE RESULTS SUGGESTS THAT IN THE GLASSES STUDIED, VANADYL FORMS C SUB4 V TYPE SYMMETRY COMPLEXES AND THE UNPAIRED ELECTRON IS LOCALIZED ON THE B SUB2 G TYPE ORBITAL, CONSTRUCTED FROM 3D SUBXY ORBITAL OF V PRIME4 POSITIVE AND 2RHO ORBITALS OF O LIGANDS. THE COEFFS. BETA SUB1 AND BETA SUB1 PRIME AT THE ED SUBX NEGATIVE AND 2RHO ORBITALS, RESP., ARE DETD. BY THE DEGREE OF LOCALIZATION OF THE UNPAIRED ELECTRON ON THE RESP. ORBITALS AND, THEREFORE, CHARACTERIZE THE PI BONDING IN THE EQUATORIAL PLANE OF THE COMPLEX. ANALOGOUS, B SUB1 EPSILON ORBITAL OF THE COMPLEX IS CONSTRUCTED FROM 3D SUBX PRIME2 MINUS SUBY PRIME2 ORBITALS OF V PRIME4 POSITIVE AND RHO ORBITALS OF THE VANADYL O AND THE CORRESPONDING COEFFS. (ALPHA AND GAMMA) AT THE D FUNCTIONS CHARACTERIZE THE SIGMA BONDING IN THE EQUATORIAL PLANE AND THE PI BONDING OF V WITH THE VANADYL O. EVALUATION OF THE PARAMETERS OF CHEM. BONDS BY THE MO LCAO METHOD CONFIRMED THAT THE COVALENCY OF PI AND SIGMA BONDS IN THE V COMPLEX INCREASES WITH THE AMT. OF THE GLASS FORMING AGENT IN THE ORDER P SUB2 O SUB5 YIELDS SID SUB2 YIELDS B SUB2 O SUB3. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.317.421

PETROVYKH, S. V., and KOLDASOV, G. D.

"Ferrograph"

Tr. Leningr. In-t Aviats. Priborostr. [Works of Leningrad Institute of Aviation Instruments], 1972, No 74, pp 194-197 (from Referativnyy Zhurnal, No 11, Nov 72, 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 11.32.1020)

Translation: An installation for oscillographing hysteresis loops of flat-film magnetic elements, its functional diagram, technological characteristics, and measuring error are investigated. A new method to measure magnitudes of residual induction (I) of elements is suggested which increases the measuring exactness. The point of the suggested method consists in the following: into the amplification loop of signals proportional I in the magnetic element, is introduced a summator for summarizing the mentioned signals and signals proportional to the remagnetizing field. By regulating the amplitude of the signal proportional to the remagnetizing field, a transformation of the signal proportional to I will be obtained by which the magnitude of its amplitude will be proportional to the magnitude of the residual I in the element. The error of the photographer, when measuring I, is in the discussed case not 1/2

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USSR

PETROVYKH, S. V., and KOLDASOV, G. D., Tr. Leningr. In-t Aviats. Priborostr, 1972, No 74, pp 194-197

determined by the error of electronic schemata, but by the error in measuring the dimensions of magnetic elements. Three illustrations, four bibliographical references.

2/2

USSR

UDC 621.396.967:629.7.072.8

ONUFRIYEV, V. P., KUZNETSOV, V. N., PETRUCHEK, T. P.

"An Imitator of Meteoric Radar Signals"

Radiotekhnika. Resp. mezhved. nauch-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 12, pp 38-40 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7G51)

Translation: This paper discusses development of a simulator designed for checking whether the units and modules of radar installations are functioning properly, and for imitating various characteristics of reflections from meteor trails. A description is given of an imitator which can be used to simulate Doppler frequency shift of a coherent pulse radar, and the time of existence of a reflection from a meteor trail. The Doppler frequency shift is simulated by means of two frequencies whose difference can be varied. The problem of obtaining the two frequencies is solved by the method of successive frequency displacement with splitting into two frequency channels. A block diagram of the simulator is presented and described. One illustration. Resumé.

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UDC[537.226+537.311.33]:[535+535]

USSR.

PETRUCHUK, I. I., and SURIN, Yu. V.

"Memory Effect in Metal-Silicon Nitride-Gallium Arsenide System"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Engineering. Collection of Scientific and Technical Works on Microelectronics), 1971, vyp. 3(29), pp 88-91 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YB1411 by authors)

Translation: The authors studied the effects of surface-potential instability leading to lasting hysteresis in the Al-Si<sub>3</sub>N<sub>4</sub>-GaAs<sup>n</sup>-GaAs<sup>p</sup>-In structure. It is shown that the memory effect caused by lasting hysteresis in the Si<sub>3</sub>N<sub>4</sub>-GaAs system is similar to the memory mechanism in the Si<sub>3</sub>N<sub>4</sub>-Si system and is determined by the space charge accumulation and resorption at trapping levels in silicon nitride near the Si<sub>3</sub>N<sub>4</sub>-GaAs interface.

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USSR

UDC 911.3.616.9.576.895.771(571.56)

TIMOFEYEVA, L. V., MITROFANOV, A. M., VINOGRADSKAYA, O. N., RASNITSYN, S. P.,  
PETRUCHUK, O. Ye., RYAZANTSEV, V. A., and YERMISHEV, Yu. V.

"Organizational Principles in the Struggle Against Blood-Sucking Midges and  
Aedes Mosquitoes on the Basis of Their Biological Characteristics"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med.  
parazitol. i tropich. med., 1970 (Proceedings on the Conference Commemorat-  
ing the 50th Anniversary of the Institute of Medical Parasitology and  
Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 50-51  
(from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.75)

[No abstract]

1/1

USSR

UDC 621.791:620.192.7

KASATKIN, B. S., SOTCHENKO, V. P., KORAB, G. N., PETRUKHA, V. YE.,  
MASLENKOV, YU. A., and BELOV, A. S.

"Device for Studying Slow Deterioration of Welded Joints"  
Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 74-75

Abstract: This is a brief report on a device developed and manufactured at the Institute of Electric Welding imeni Ye. O. Paton for studying slow deterioration of welded joints. It automatically holds a given load on the specimen and changes it in accordance with a preset program. The specimens can be welded in the longitudinal and transverse directions with respect to the loading axis manually or automatically under flux and in shielding gases. A schematic and the basic parameters of the device are presented.

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USSR

PETRUKHIN, B. P., Candidate of Technical Sciences

UDC 621.374

"A Method of Improving the Characteristics of Some Types of Logic Elements"  
Moscow, Pribory i Sistemy Upravleniya, No 6, Jun 71, pp 32-33

Abstract: Because the "one" signal level of some types of logic elements (resistor-transistor elements in particular) depends to a great extent on the number of similar elements connected at the output, the "one" signal may differ considerably in one and the same circuit, which creates difficulties where devices such as a counting flip-flop with potential-pulse input require a signal of a definite level with narrow margin for normal operation. A method is proposed for stabilizing the "one" signal which requires no additional power supply. The decoupling resistors are connected to the collector of the transistor rather than in the base circuit as in the conventional element. A constant "one" signal at the output is ensured by connecting unused resistors in the collector circuit to a common point in the flip-flop element. In addition to its stabilizing function, the proposed circuit provides a higher coefficient of splitting than the conventional resistor-transistor element. A disadvantage of the proposed circuit is the increased power consumption (and dissipation), especially when not all inputs are used.

1/1



Ion Exchange

USSR

UDC 66.074.7:546.81

TIKHOMIROV, V. K., and PETRUKHIN, N. V.

"Use of Strongly Basic AV-17 Anion Exchange Resin for Separation and Purification of Thorium. II"

Leningrad, Radiokhimiya, Vol XIII, No 2, 1971, pp 318-320

Abstract: The experimental procedure and data from a study of the behavior of micro amounts of thorium during its separation from solutions with significant salt content are discussed. Micro amounts of thorium-234 were separated from samples of the indicated type by sorption on AV-17 anion exchange resin from 11 normal nitric acid. It was found expedient to introduce the thorium-232 carrier into the sample. The method can also be used for analyzing uranium (235 and 238) isotope samples by the measured  $\beta$ -activity of thorium-231 and thorium-234.

The experimental data are plotted for separation of micro amounts of thorium-234 by means of the AV-17 anion-exchange resin, micro amounts of thorium-234 in the presence of thorium-232 carrier and separation of thorium-232 all in the presence of large amounts of soluble salts. The results of washing the fission products (with nitric acid solution irradiated by

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USSR

TIKHOMIROV, V. K., and PETRUKHIN, N. V., Radiokhimiya, Vol XIII, No 2, 1971,  
pp 318-320

mixed uranium oxide aged for eight months) in the presence of the same salts  
are also plotted. No sorption of the fission products was observed.

2/2

- 15 -

1/2 012  
UNCLASSIFIED  
PROCESSING DATE--27NOV70  
TITLE--SYNERGISTIC EFFECTS IN THE SOLVENT EXTRACTION OF CHELATE COMPOUNDS.  
INFLUENCE OF THE DONOR ATOMS OF THE REAGENT -U-  
AUTHOR--(03)-ZOLOTOV, YU.A., PETRUKHIN, O.M., GAVRILOVA, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--J. INORG. NUCL. CHEM. 1970, 32(9), 1679-88  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SOLVENT EXTRACTION, ZINC, CHELATE COMPOUND, ORGANIC PHOSPHATE,  
KETONE, MERCAPTAN, QUINOLINE, CARBAMATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/2126  
STEP NO--UK/0000/70/032/005/1679/1688  
CIRC ACCESSION NO--AP0125710  
UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0125710

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLVENT EXTN. OF ZN WAS INVESTIGATED IN THE FORM OF CHELATE COMPS. WITH 2,THENOYLTRIFLUOROACETONE, 1,PHENYL,3,METHYL,4,BENZOYL,5,PYRAZOLONE, 1,5,DIPHENYLCARBAZONE, 8,MERCAPTOQUINOLINE 1,5,DIPHENYLTHIOCARBAZONE (DITHIZONE), AND DIETHYLDITHIOCARBAMATE. BENZENE WAS USED AS DILUENT. EXTN. OF THE ABOVE COMPS. IN THE PRESENCE OF BU \$UB3 PD SUB4 WAS ALSO STUDIED. A SYNERGISTIC EFFECT WAS OBSERVED FOR THE EXTN. OF COMPLEXES OF THE 1ST 3 REAGENTS, ITS MAGNITUDE DECREASING IN THE INDICATED SEQUENCE. WHEN USING S CONTG. REAGENTS, THE EFFECT WAS COMPLETELY ABSENT. THIS MAY BE ACCOUNTED FOR BY THE DIFFERENCE IN THE COORDINATION NO. OF THE METAL ION IN CHELATES. IT IS ASSUMED THAT THE STRONGER THE METAL REAGENT BOND. CHEM., MOSCOW, USSR.

FACILITY: VERNADSKII INST. GEOCHEM. ANAL.

UNCLASSIFIED

1/2 010

TITLE--INVESTIGATION OF THE EXTRACTION OF SOME COPPER, II, CHELATES USING  
ISOTOPE COPPER 64 -U-  
AUTHOR--(03)--RAKOVSKIY, E.E., PETRUKHIN, O.M., SEVERIN, V.I.

UNCLASSIFIED

PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--J. RADIOANAL. CHEM. 1970, 4(2), 207-14

P

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--COPPER ISOTOPE, COPPER COMPLEX, COPPER EXTRACTING,  
DISSOCIATION CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2038

STEP NO--NE/0000/70/004/002/0207/0214

CIRC ACCESSION NO--AP0125626

UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--A0125626

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTN. OF CU(II)  
 8, HYDROXYQUINOLINATE, 5,7, DICHLORO, 8, HYDROXYQUINOLINATE, AND  
 2, THENYLTRIFLUOROACETONATE WAS INVESTIGATED AND THE STABILITY CONSTS.  
 AND DISTRIBUTION CONSTS. OF THE COMPLEXES WERE DETD. THE DEPENDENCE OF  
 THE PH VALUES FOR 50PERCENT EXTN. AND OF THE DISTRIBUTION CONSTS. OF THE  
 CU COMPLEXES ON THE DISSOCN. CONSTS. AND DISTRIBUTION CONSTS. OF THE  
 CORRESPONDING AGENTS ARE DISCUSSED. FACILITY: CENT. MINING RES.  
 INST. NONFERROUS METALS, MOSCOW, USSR.

UNCLASSIFIED

PETRUKHIN, V. G.

JPRS 55341  
6 March 72  
UDC: 611.1.014.477-019

THE EFFECT OF C FORCES ON THE MICROCIRCULATORY SYSTEM

[Article by V.V. Kupriyakov, V.G. Petrukhin, Chair of Normal Anatomy (headed by Professor V.V. Kupriyakov, corresponding member of the USSR Academy of Medical Sciences) of the 2nd Moscow "Order of Lenin" Medical Institute Imeditsinskii-Fizologov; Leningrad, Arkhiv Anatomii, Gistolologii i Embriologii, Russian, No 11, 1971, submitted 12 February 1971, pp 17-30]

In the flow of morphological literature of the last few years there is a persistent jet of numerous publications dealing with the effect of gravitational stress on the vascular system of experimental animals. A series of investigations in our country began with the reports of V.S. Stepanov (1953, 1955) from the laboratory of M.G. Prives. In these 15 years the disciples of M.G. Prives have published many articles. Almost all vascular regions are covered: arteries of muscles, skin, kidneys, spinal cord, brain, endocrine glands, joint capsules, nerve trunks, veins of the liver, spleen, lymphatic vessels of the extremities. Dozens of authors were involved in the investigations. The flow of information is growing continuously. A scrutiny of the published works convinces us that the facts obtained are rather consistent and constitute a, so to speak, orderly series of evidences of the validity of the positions upheld.

Until recently, the only wish that had not come true was to use methods other than the injection method that would define and supplement some findings with regard to evaluating the condition of the vascular bed. With all its enduring value for investigation of the topography and architecture of vessels, the injection method is inadequate for demonstration of fine changes in the vascular system, for precise description of the condition of the microscopic vessel. Yet another consideration is suggested after scrutinizing the documentation illustrating the published works. On preparations and photographs, filled vessels are found to be separated from the substrate in which they exist during life. Efforts to detect the moment of adverse effect of the circulatory disorder on the surrounding tissue are completely ruled out, since such tissues are not visible and their condition is not recorded. Yet, it is precisely according to the state of functioning tissues of an organ that one can judge with a high degree of reliability

MEDICINE

Aerospace Medicine

USSR

UDC: 613.693

PETRUKHIN, V.G., Doctor of Medical Sciences, Lt Col Med Serv

"Physiological and Morphological Effects of Accelerations"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1970, pp 65-68

Abstract: A general summary is given of the results of about a thousand experiments performed on different animals (dogs, monkeys, rats, mice, and guinea pigs) to determine when accelerations result in irreversible structural changes, and the extent to which accelerations can be tolerated through morphological changes in the tissues. A close relationship was observed between the physiological effects of accelerations in any direction, and subsequent structural disorders in organs. The greater the functional shifts especially in the cardiovascular and respiratory systems, the deeper the morphological changes, and the longer the period of repair. On the other hand, accelerations insufficient to alter physiological functions cause no more than transient morphological shifts. The level of tolerance to acceleration is determined by the original condition of the organism, the compensatory capabilities of the cardiovascular system, the amount of energy reserves, and the nature of the redox processes in the tissues. The limit of tolerance is not constant, but may vary considerably, depending on the condition of the organism at any particular time. Resistance to accelerations can be enhanced

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PETRUKHIN, V.G., Voenno-Meditsinskiy Zhurnal, No 2, 1970, pp 65-68

by increasing the compensatory capabilities of the cardiovascular and respiratory systems, augmenting the energy resources in vital organs and depots, reducing anaerobic glycolysis, and intensifying oxidative processes in the tissues.

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1/2 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--PHYSIOLOGICO MORPHOLOGICAL ASSESSMENT OF THE EFFECT OF ACCELERATIONS -U-

AUTHOR--PETRUKHIN, V.G.

P

COUNTRY OF INFO--USSR

SOURCE--VOENNO MEDITSINSKII ZHURNAL, FEB. 1970, P. 65-68

DATE PUBLISHED--FEB70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC ACCELERATION EFFECT, DOG, MONKEY, RAT, MOUSE, GUINEA PIG, HUMAN CENTRIFUGE EQUIPMENT, CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0928

STEP NO--UR/0177/70/000/000/0065/0068

CIRC ACCESSION NO--AP0109085

UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0109085

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE RESULTS OF A  
 TOTAL OF ROUGHLY 1000 TESTS IN WHICH THE ACCELERATION TOLERANCE OF DOGS,  
 MONKEYS, RATS, MICE AND GUINEA PIGS WAS DETERMINED UNDER ACCELERATIONS  
 IN VARIOUS DIRECTIONS IN A CENTRIFUGE. A CLOSE RELATION IS ESTABLISHED  
 BETWEEN PHYSIOLOGICAL REACTIONS UNDER ACCELERATION AND SUBSEQUENT  
 STRUCTURAL DISORDERS IN VARIOUS ORGANS OF THE EXPERIMENTAL ANIMALS. IT  
 IS FOUND THAT ACCELERATIONS IN ANY DIRECTION PRODUCE ONLY TEMPORARY  
 STRUCTURAL SHIFTS IF THEY DID NOT AFFECT PHYSIOLOGICAL FUNCTIONS.  
 ACCELERATION TOLERANCE IS FOUND TO BE GENERALLY HIGHER WHEN THE  
 COMPENSATORY CAPACITY OF THE CARDIOVASCULAR AND RESPIRATORY SYSTEMS IS  
 HIGHER WHILE THE ANAEROBIC GLYCOLYSIS IS LESS INTENSIVE AND THE  
 OXIDATION PROCESSES IN THE TISSUES ARE STRONG.

UNCLASSIFIED

USSR

UDC 539.192/.194+535.33/.34.01

KRUMSHTEYN, Z. V., PETRUKHIN, V. I., SMIRNOVA, L. M., SUVOROV, V. M., YUTLANDOV,  
I. A.

"Investigation of the Character of the H-O Bond in Certain Oxygen-Containing Acids  
With the Aid of  $\pi$ -Meson Capture by Hydrogen"

Issledovaniye khraktera svyazi H-O v nekotorykh kisloroĥsoderzhashchikh kislotakh  
s pomoshch'yu zakhvata  $\pi$ -mezonov vodorodom (cf. English above), Joint Institute of  
Nuclear Research, Laboratory of Nuclear Problems, No. P12-5224, Preprint, Dubna,  
1970, 10 pp, ill. (from RZh-Fizika, No 5, May 71, Abstract No 5D98)

Translation: The degree of ionicity of the H-O bond in sulfuric acid, nitric acid,  
phosphoric acid, boric acid, and oxalic acid was evaluated with the aid of  $\pi$ -meson  
capture by hydrogen. Oxalic acid should belong to a group of stronger acids on the  
basis of the degree of the ionicity of the H-O bond.

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USSR

(18)

BALOSHIN, O. N., BLAGORODOV, A. M., BOLONKIN, B. V., VLADIMIRSKIY, V. V.,  
GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV,  
I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N.,  
PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV,  
YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO,  
YU. P., Institute of Theoretical and Experimental Physics GKI AE (State  
Committee for the Use of Atomic Energy)

"The  $K^-p \rightarrow K^0n$  Charge Exchange Reaction at a Pulse of 39 Gev/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of  $K^-$ -mesons on protons ( $K^-p \rightarrow K^0n$ ) at a pulse of 39 Gev/sec. The study was carried out using the ITEF 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was  $1.0 \times 1.5 \times 6$  m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544 with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The  $K^-$ -mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately  $5 \cdot 10^7 K^-$ -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of  $7.4 \pm 1.2$  microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to  $-1.58 \pm 0.05$ . The authors thank K. G. Borekov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section on pulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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USSR

BALOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V.,  
KRUTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S.,  
PETRUKHIN, Y. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of  
Theoretical and Experimental Physics of the State Committee for the Use of  
Atomic Energy

"Study of the Reaction  $\pi^- p \rightarrow p \bar{K}^-$  at a Momentum of 3.25 GeV/c With  
a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a  
proton in the reaction  $\pi^- p \rightarrow p \bar{K}^-$  for high transfer momentums using  
a track spectrometer with optical spark chambers in a magnetic field. They  
found the momentum of the primary  $\pi^-$  mesons to be 3.25 GeV/c, and they  
measured the differential cross section of the formation of the  $\bar{K}^-$  meson  
in the range of angles  $-1 \leq \cos \theta^* \leq -0.0005$ , which was found to be  
equal to  $28.2 \pm 9.8$   $\mu\text{barn/sterad}$ . Figure 1 shows the spectrum of the  
missing masses in this reaction for a momentum of the  $\pi^-$  meson of 3.25  
GeV/c. Figure 2 shows the cross section of the creation of the  $\bar{K}^-$  meson  
backwards in the reaction  $\pi^- p \rightarrow p \bar{K}^-$  as a function of the momentum  
of the  $\pi^-$  mesons. The article contains 2 figures and 5 bibliographic  
entries. 1/1

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Construction

USSR

UDC 624.131.43:531.5

CHERKASOV, I. I., MIKHEEV, V. V., PETRUKHIN, V. P., PAKULIN, V. A., SNARSKII, A.S., and SHVAREV, V. V.

"Effect of Gravity on Mechanical Properties of Soils"

Moscow, Osnovaniya, fundamenty i mekhanika gruntov. No 1, 1970, pp 14-18

Abstract: Results are given of an experimental investigation of the effect of gravity on mechanical properties of soils, conducted in an aircraft and in a centrifuge. The first series of experiments were conducted in a specially equipped TU-104 aircraft flying along a specific trajectory. Along a section of this trajectory the soils were subjected to an acceleration  $a = 1.62\text{m/sec}^2$  for 8 seconds, i.e.  $1/6$  g at ground level. The second series were conducted on a centrifuge, on which soils were subjected to 55.1, 98.1 and  $196.2\text{m/sec}^2$  acceleration, i.e. 5.6, 10, and 20 g. Both series of tests contained controlled tests in motionless aircraft and centrifuge. The overload coefficient  $h = a/g$  varied from 0.165 to 20. Experimental setups and techniques for both the aircraft and centrifuge tests are described in detail. A photograph of the airborne equipment and a schematic drawing of the centrifuge are presented. Four types of soils were tested, whose physico-mechanical properties are given in a table. They are: 1) silica sand;

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CHERKASOV, I.I., et al., Osnovaniya, fundamenty i mekhanika gruntov. No 1, 1970, pp 14-18

2) agloporite gravel with negligible bond and of low specific weight; 3) keramsit gravel, loose material with rounded granules; 4) soft plastic clay of great specific weight, with strong bond and small internal friction angle. The results are presented in graphs and tables. They show that at 6g the angle of rest in agloporite and keramsit gravels decreases while it remains nearly constant in the silica sand. An analysis of motion picture records shows that a certain reduction in angle of rest is related to the aircraft vibration. Thus, it is considered that the variation of gravity has no effect on the angle of rest of loose granular soils. A specially adapted H-700 oscillograph was used for recording experiments in the centrifuge. The deformation aptitude of both type of soils was determined, taking the sag of the pressing stamp under  $1\text{kg/cm}^2$  pressure on the base, as a comparability criterion.

A comparison with theoretical data for carrying power shows that: 1) the gravity variation in accordance with the theory of limit equilibrium, substantially affects the carrying power of sand and weakly affects that of plastic clay; 2) in contrast to the theory of limit equilibrium the carrying power of sand varies a little less than in direct proportion to gravity. The carrying power of clay does not remain constant, but increases slightly with gravity. The causes of these discrepancies are discussed and tentatively explained. Orig. art. has: 6 figures, 7 tables.

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Forming

USSR

UDC 669.715:621.77

ABRAMOV, O. V., PETUKHOV, V. I. and MANEGIN, YU. V.

"Application of Ultrasonic Vibrations to Press Forming of Metals"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 63-65

Abstract: Discussed in this study are various systems of applying ultrasonic vibrations to the area of deformation and the effect of vibration amplitude on both the power parameters and the degree of nonuniformity of metal deformation in either direct or indirect extrusion. The results of the study indicate that ultrasonic treatment was most effective in direct extrusion when applied to the plastic deformation zone through the die and in indirect extrusion -- when applied through the ram. An increase in the amplitude of elastic vibration displacement decreases both the press forming force and the degree of nonuniformity in metal deformation. The effect of ultrasound on the power parameters of press forming may be related to the decrease in the coefficient of friction in the deformation area and to the increase of plasticity in the formable metal. The ultrasonic vibration equipment involved in the study is detailed. (3 illustrations, 1 table, 4 bibliographic references).

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