

USSR

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

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

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

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TANNING OF LEATHER -U-
AUTHOR--(03)-YAREMCHUK, N.A.; LEVITAS, I.E., BRANDYBURA, I.M.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,601
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TANNING MATERIAL, LEATHER, PATENT, FORMALDEHYDE, UREA,
CHROMIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1087 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0116553
UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--AA0116553

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EXCLUDE THE SOFTENING PROCESS AND IMPROVE LEATHER QUALITY, IT IS TANNED BY DECALCIFYING AND WASHING; THEN THE CLEAN RAW HIDES ARE TANNED WITH CR SALTS IN THE PRESENCE OF HCHO CONDENSATION PRODUCTS OF THE HYDROLYZATE OF COLLAGEN, UREA, AND NH SUB4 SALTS.

FACILITY: LVOV POLYTECHNIC INSTITUTE.

UNCLASSIFIED

USSR

IVAKHNENKO, A. G., TOLOKNYANENKO, V. A., and YAREMENKO, A. G., Kiev

"Control with Optimization of Prediction with Discrete Linear Predicting Models of a Plant"

Kiev, Avtomatyka, Jan-Feb 74, pp 28-38

Abstract: As distinct from an article in issue #2, 1973, of this journal by Ivakhnenko and Toloknyanenko entitled "Control with Optimization of Prediction with Continuous Models of a Plant," this article considers systems with discrete, linear predicting models. Optimization is performed on a sliding prediction interval. Equations are obtained for the action of a closed system. The authors study the effect of the prediction time on the action and stability of closed-loop control systems with optimization of prediction. An asymptotic law is established according to which a decision taken at the current moment undergoes no changes with a further increase in the prediction time if the prediction time is sufficiently great. According to the principle of the Pontryagin maximum, optimal control is found which is possible with optimization of processes whose behavior can be predicted by means of linear Models.

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IVAKHNENKO, A. G., et al., *Avtomatyka*, Jan-Feb 74, pp 28-38

In the case of problems of large dimension and with nonlinear filters, one should apply the principle of self-organization ["Self-Organization of Recognition Systems and Automatic Control," Kiev, 1969, by a A. G. Ivakhnenko].

The article includes 17 equations and two figures. There are six references.

2/2

USSR

UDC: 612.766.2

YAREMENKO, B. R., Chair of Pathological Physiology, Military-Medical Academy
imeni S. M. Kirov

"The Effect of Prolonged Hypodynamia on Some Physiological Functions in Dogs"
Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6,
Nov/Dec 70, pp 10-12

Abstract: Twenty dogs were kept under conditions of almost total restraint for 14-28 days (the animals could do little more than stand up, lie down, and eat). Eight of the dogs behaved in a largely passive manner, while 12 remained quite active. Most of the passive animals had edemas of the hind paws, sores, or ulcers after 2 weeks. By the end of the 3d week they could not stand or sit and preferred liquid to solid food. The active animals, on the other hand, appeared to be normal in all respects, and it was not until the last day of the experiment that slight edema of the hind paws developed. In all of the animals, arterial pressure gradually rose during the first 2 weeks and remained high thereafter. The pressor sinocarotid reflex decreased markedly toward the end of the experiment. Cardiac rate and body temperature were not significantly affected at any time. Plasma cholinesterase activity increased on the 21st day. Despite the

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YAREMENKO, B. R., *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*,
Vol 14, No 6, Nov/Dec 70, pp 10-12

differences in behavior of the two groups of animals, the general trend of the
physiological shifts induced by hypodynamia was the same.

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Acc. Nr: **AP0052073**

Ref. Code: **UR 0396**

PRIMARY SOURCE: *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, 1970, Vol 14, Nr 1, pp 76-78

THE EFFECT OF PITUITRIN ON THE BILE-FORMING FUNCTION OF THE LIVER

M. S. Yaremenko

In dogs anesthetized with nembotal (30 mg/kg) intravenous injection of pituitrin at the rate of 5 ml per 1 kg of body weight, for 45 minutes caused a distinct elevation of bile secretion, reduction of Ca concentration and diminution of bile refraction index: concentration of K fell but insignificantly, and of Na — remained almost unchanged. Intravenous injection of oxytocin to the animals failed to change or somewhat depressed the bile secretion.

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YH

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REEL/FRAME
19820611

USSR

UDC: 621.315.592

YAREMENKO, N. G., POTAPOV, V. T., and IVLEVA, V. S., Institute of
of Radio Engineering and Electronics, Moscow

"Electrical Conductivity and Hall Effect in Strongly Compensated
n-InSb at Low Temperatures"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp
1238-1247

Abstract: Considering that detailed investigations of the effect
of strong compensation on galvanomagnetic effects in n-InSb at
low temperatures are lacking in the literature, the authors de-
scribe experiments they performed to determine the characterist-
ics of this material. They measured the Hall effect and the con-
ductivity in pure and germanium-contaminated n-InSb monocrystals
at temperatures of 4.5 to 500 K in the d-c mode. They used the
compensation method at currents through the specimen which did
not heat the crystal lattice, measuring the Hall effect in a weak
magnetic field of 230 oersteds. A table of the specimen para-
meters, measured at 30° K instead of the usual 77° K, is given
together with curves of the n-InSb Hall constant and conductivity
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YAREMENKO, N. G., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1238-1247

as functions of the temperature. Curves are also given for the Hall constant and the conductivity as functions of the lattice temperature. It is noted that in the absence of a theory of the Hall effect under conditions of current pinching, it may be assumed that the expression for the effect is no longer valid under those conditions. Appreciation is expressed to S. G. Kalashnikov and Yu. V. Gulyayev for their interest in the work, to V. I. Trifonov, I. I. Chusov, and V. M. Afinogenov for their comments, and to G. A. Mushletsova for her assistance with the measurements.

2/2

USSR

UDC: 622.243.144.4

SACHKOV, V. V., KHARIV, I. Yu., TITARENKO, N. Kh., FESENKO, N. N., YAREMENKO, V. A., Poltava Division of Ukrainian Scientific Research Institute for Geological Prospecting

"Ultrasonic Treatment of Drilling Solution in Order to Restore its Structural and Mechanical Properties"

Moscow, Bureniye, No 7, 1973, pp 18-21.

Abstract: A method is studied for restoration of the structural and mechanical properties of solutions by ultrasonic treatment, allowing the restoration of lost properties to be accelerated, while reducing the consumption of materials and expenditures of labor, particularly manual labor, related to the preparation of chemical reagents and treatment of the solution with the reagents. Results are presented from restoration and improvement of these properties during ultrasonic processing directly at drilling sites. The mechanism of action of the ultrasound on natural and artificial solutions is described. The Institute has developed several designs of hydrodynamic vortex-type radiators for production ultrasonic treatment of solutions. These radiators are simple in design and reliable in operation. They can be driven by either centrifugal or piston-type pumps. The mechanism of action of the ultrasound consists in effective

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Sachkov, V. V., Kahriv, I. Yu., Titarenko, N. Kh., Fesenko, N. N., Yaremenko, V. A., Moscow, Bureniye, No 7, 1972, pp 18-21.

dispersion of particles of clay materials, increasing their number per unit volume and thus increasing the surface of the active solid phase and forming a better developed, stronger coagulation structure in the solutions.

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USSR

UDC: 681.3

MUZYCHUK, V. T., YAREMENKO, V. V.

"Circuit Realization of Operators in the Specialized Language TEKHNOL"

V.sb. Sredstva tekhn. kibernet. (Facilities of Technical Cybernetics--
collection of works), Kiev, "Tekhnika", 1970, pp 3-13 (from RZh-Kiber-
netika, No 9, Sep 71, Abstract No 9V547)

Translation: The authors consider the operations in a machine language for a special computer designed to solve problems of technological design. Taking the example of tabular operations as a basis, the authors consider the problem of structural realization of the operations through the method of formal synthesis of an automaton according to a microprogram. On the basis of the resultant microprogram, the functions of the outputs and the functions of the excitation are determined and used in designing the functional circuit of the automaton. V. Mikheyev.

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Plant Pathology

UDC 632.4:633.11:582.285.2(47+47)

USSR

LESOVOY, M. P., FEDOROVA, V. A., SHKODENKO, V. I., TERESHCHENKO, B. A.,
SHOPINA, V. V., IBRAGIMOV, G. R., AKHMEDOV, S. A., YEROGORVA, H. L.,
MAMONTOVA, A. N., PERESYPKIN, V. F., BOYKO, Yu. I., SHAVARINA, Z. A.,
CHUMAKOV, A. Ye., YAKEMENKO, Z. I., PAYCHADZE, L. V., and EL'CHILAYEV, A. A.,
All-Union Institute of Plant Protection, Ukrainian Institute of Plant
Protection, Ukrainian Agricultural Academy, Azerbaydzhan Institute of Agricul-
ture, Central Asian Institute of Plant Pathology, and Kazan' Institute of
Plant Protection, Georgian Institute of Plant Pathology

"Race Formation in *Puccinia triticina* Eriks. and *P. striiformis* West. in the
USSR"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

Abstract: Study of the causative agents of orange leaf and stripe rusts of
wheat in different parts of the Soviet Union and some other European countries
showed that, despite the great variety of races, only a few are responsible for
epiphytotics. The main races are fairly constant from year to year. This
stabilization is due to the fact that that more than 90% of all the regionalized
wheat varieties in the USSR are susceptible to all races of the pathogens. The
racial composition of the pathogens in the USSR is similar to that occurring
elsewhere in Europe because of the exchange of original forms and use of the

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USSR

LESOVOY, M. P., et al., Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

same components in breeding wheat varieties. The appearance of new races and biotypes and changes in their virulence are the result of mutation, heterokaryosis, resistant varieties, and sexual hybridization.

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USSR

UDC 582.285.22:633.527.2(479.22)

YAREMENKO, Z. I., Georgian Branch, All Union Scientific Research Institute of Plant Pathology, Kobuleti, Adzhar ASSR

"Specialization of Stem Rust in Urediospores on Wild Grasses in Georgia"

Leningrad, Mikologiya i Fitopatologiya, No 4, 1971, pp 408-409

Abstract: Field studies conducted in Georgia in 1964-1968 revealed that 58 species of grasses belonging to 25 genera are reservoirs of stem rust. The rate of infection was highest in Agropyron, Agrostis alba, Bromus sp., Festuca sp, Lolium sp., and Poa sp. The rye form of the fungus was found twice (in 1964 and 1968) on Dactylis glometata and Agropyron repens. The oats form was found only in 1968 on 3 grass species - Avens fatua, Agropyron repens, and Alopecurus myosuroides. The wheat form is by far the most common, occurring in 27 species. The predominance of the wheat form is ascribed to the fact that about 10 wheat species grow in the Transcaucasus, but almost no rye or oats, and the wild forms of these grasses are very abundant.

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USSR

UDC 539.4

AFANAS'YEV, P. D., SCHUL'GA, N. G., and YAREMKEVICH, S. K., L'vov

"Thermomagnetic Treatment of Fe-Ni-Al-Co Alloys With Low and Medium Content of Cobalt"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 140-143

Abstract: Results are presented of an investigation of the effectiveness of the thermomagnetic treatment of Fe-Ni-Al-Co alloys with low and medium cobalt content. The growth of magnetic properties B_r and BH_{max} after thermomagnetic treatment ranges between 10-15% for alloys with 2-6% cobalt and between 20-25% for Fe-Ni-Al-Co alloys with 12-15% cobalt. The effectiveness of thermomagnetic treatment can be increased considerably by raising the Curie point of alloys with 12-15% cobalt at the expense of a decrease in nickel content to 17-17.3% and aluminum to 7-7.5% and an increase of silicon to 0.5-0.8%. An oscillographic method for determining the Curie point of stable magnets is described.

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1/3 042

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--EFFECT OF ULTRASONIC TREATMENT ON THE PHYSICOMECHANICAL PROPERTIES OF SOME PRECISION ALLOYS -U-

AUTHOR--BABEY, YU.I., YAREMKEVICH, S.K., SHULGA, N.G., VYGOVSKIY, I.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 656-60

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MECHANICAL PROPERTY, ULTRASONIC EFFECT, METAL INTERNAL FRICTION, MAGNETIC PROPERTY, IRON ALLOY, NICKEL ALLOY, MAGNETIC MATERIAL, ALUMINUM ALLOY, COBALT ALLOY, THERMOMAGNETIC EFFECT, PRECISION ALLOY, MAGNETIC FIELD, DISPERSION HARDENING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0661

STEP NO--UR/0369/70/005/005/0556/0660

CIRC ACCESSION NO--AP0105639

UNCLASSIFIED

2/3 042

UNCLASSIFIED

PROCESSING DATE--17SEP70

CIRC ACCESSION NO--AP0105639

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEVEN DISPERSION HARDENED, PRECISION ALLOYS Fe-NI-AL-CO (RANGES NI 13.5-19.6, AL 7.0-12.27, CO 12.0-36.5, SI 0.0-0.5, TI 0.24-7.0 OR NB 0.5-0.8 WT. PERCENT, FE REST) WERE STUDIED AS TO THE EFFECT OF ULTRASOUND ON PROPERTIES AND STRUCTURE. ALL SPECIMENS WERE HEATED TO 1250-80DEGREES, HELD FOR 15-20 MIN, AND COOLED TOGETHER WITH THE FURNACE AT 20DEGREES PER HR. THE THERMOMAGNETIC TREATMENT WAS CARRIED OUT BY HEATING IN A BAOL SUB2 BATH AT 800-40DEGREES FOR 10 MIN, FURTHER HEATING ALSO IN BAOL SUB2 AT 1280DEGREES FOR 10-15 MIN. COOLING IN LOWER TEMP. RANGE AT THE CRIT. RATE 40-60DEGREES PER MIN IN A MAGNETIC FIELD. BEFORE THE ULTRASONIC TREATMENT THE FOLLOWING ALTERNATIVE THERMAL TREATMENTS WERE APPLIED: (1) HEATING TO 1250-80DEGREES, COOLING IN THE LOWER TEMP. RANGE (400-850DEGREES) AT 40-60DEGREES PER MIN AND TEMPERING AT 600DEGREES, (2) STEPWISE HEATING AND COOLING AT CRIT. RATE FROM 1280DEGREES IN A MAGNETIC FIELD, (3) THE ABOVE MENTIONED THERMOMAGNETIC TREATMENT WITH TEMPERING FOR 4 HR AT 600DEGREES, AND (4) STEPWISE HEATING AND COOLING WITH CRIT. RATE IN MAGNETIC FIELD (WITHIN THE REGION OF SOLID SOLN.) WHILE APPLYING ULTRASOUND DURING TEMPERING AT 600DEGREES WITH VARYING TIME PERIODS. THE IRRADN. WITH ULTRASOUND WAS CARRIED OUT AT 18-20 KHZ IN A MAGNETIC FIELD OF 1500-2000 OE. AFTERWARDS, THE MICROSTRUCTURE, MAGNETIC PROPERTIES, SP. ELEC. RESISTANCE, THERMAL EXPANSION, MICROHARDNESS, INTERNAL FRICTION, HEAT COND., AND YOUNG MODULUS WERE DETD. THE ULTRASOUND AFTER TREATMENTS (1) AND (3) HAD NO EFFECT, WHILE TREATMENT (2) AND ULTRASOUND HAD A WEAK EFFECT ON MAGNETIC PROPERTIES.

UNCLASSIFIED

3/3 042

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105639

ABSTRACT/EXTRACT--TREATMENT (4) WAS MORE EFFECTIVE IN INCREASING THE COERCIVE FORCE AND MAX. MAGNETIC ENERGY BY 25-30PERCENT; HOWEVER, WITH 2 ALLOYS (CONTG. CO 24 AND 35PERCENT) THE MAGNETIC ENERGY AND RESIDUAL INDUCTION DECREASED BY 20-5PERCENT, (WHICH IS EXPLAINED BY THE DISINTEGRATION OF SINGLE DOMAIN STRUCTURE AND ANISOTROPY). THE FAVORABLE ACTION OF ULTRASOUND ON THE OTHER ALLOYS IS EXPLAINED BY THE CYCLIC DEFORMATION OF CRYST. LATTICE, WHICH FACILITATES DIFFUSION; WHILE ACCELERATING THE FORMATION OF SUBMICROSCOPIC PHASES FROM THE SOLID SOLN., THE ULTRASOUND HAD NO EFFECT ON THE COAGULATION RATE.

UNCLASSIFIED

USSR

UDC 621.317.331

YAREMKEVICH, S. K., SHMORGUN, Ye. I., KOCHAN, V. A., BULYGA, S. G.,
STRUK, R. I.

"Automatic Two-Coordinate Compensator for Resistometric Study of Steels and
Special Alloys"

Kontrol'no-izmerit. Tekhnika. Resp. Mezhved. Nauch.-Tekhn. sb. [Testing
and Measuring Equipment, Republic Interdepartmental Scientific and Techni-
cal Collection], 1971, No 11, pp 136-139, (Translated from Referativnyy
Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract
No 7.32.966).

Translation: An automatic two-coordinate compensator of accuracy class
0.05 is described, allowing graphs to be produced of the dependence of
resistance of metal specimens on temperature, which is necessary for resis-
tometric study of phase conversions in steels and special alloys. It is
demonstrated that the device can measure the emf of thermocouples in the
0-70 mv range and resistances of from 10^{-5} to 25 ohm (with currents passing
through the specimen of 1,000 to 0.5 a ac respectively). It is noted that
the desired graph sector can be drawn in enlarged scale. 1 Figure; 7
Biblio. Refs.
1/1

1/2 014
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--COMBINED FERMI DAVYDOV RESONANCE IN SOLID SOLUTIONS -U-
AUTHOR--(02)--LISITSA, M.P., YAREMKO, A.M.
COUNTRY OF INFO--USSR
SOURCE--MOLECULAR CRYST., LIQUID CRYST. (GB), VOL. 6, NO. 3-4, P. 393-406
(FEB. 1970)
DATE PUBLISHED--FEB70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SOLID SOLUTION, FERMI LEVEL, NUCLEAR RESONANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1354
STEP NO--UK/0000/70/006/03-/0393/0406
CIRC ACCESSION NO--AP0109438
UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AP0109438
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. A COMBINED FERMI DAVYDOV RESONANCE IN SOLID MOLECULAR SOLUTIONS IS CONSIDERED. IT IS SHOWN THAT MIGRATION OF THE ENERGY OF VIBRATIONAL EXCITATION CAN LEAD TO AN ABNORMAL REDISTRIBUTION OF INTENSITIES OF THE COMPONENTS OF FERMI DOUBLET WHEN HIGHER ORDER HARMONICS ARE DOMINANT. THE CONCENTRATIONAL DEPENDENCE OF THE RATIO OF THE INTENSITIES OF DOUBLET COMPONENTS IS INVESTIGATED. AT A CERTAIN VALUE OF THE CONCENTRATION, DETERMINED BY PARAMETERS OF THE SOLVENT AND THE DISSOLVED SUBSTANCE, A SHARP INCREASE IN THE INTENSITY OF ONE OF THE DOUBLET COMPONENTS CAN BE OBSERVED. THE BASIC CONCLUSIONS OF THE THEORY ARE IN AGREEMENT WITH THE EXPERIMENT. FACILITY:
SEMICONDUCTOR RES. INS. UKRANIAN ACAD. SCI., KIEV, USSR.

UNCLASSIFIED

Physiology

USSR

UDC 617-001.36-092.9-092-02,612.766.2

YARENKO, B. R., Department of Pathological Physiology, Academy of Military
Medicine, Imeni S. M. Kirov, Leningrad

"Course of Traumatic Shock in Dogs Subjected to Prolonged Hypodynamia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2,
1971, pp 83-84

Translation: Prolonged hypodynamia is known to affect the reactivity of the body and lower its resistance to a number of pathogenic factors. However, we found nothing in the available literature bearing on its role in traumatic shock.

Procedure. Experiments were performed on 31 male dogs weighing 13 to 24 kg. Hypodynamia was induced by keeping the dogs on special benches that sharply limited their movements. Ten animals (series 1) remained under hypodynamic conditions for 14 days and 8 (series 2), for 28 days. After the animals were removed from the bench they were secured to a table where shock was induced by crushing the soft tissues of the femur until the defensive reaction disappeared and arterial pressure dropped to 60 to 65 mm. Shock was induced in 13 intact dogs (series 3, control) in a similar manner. Arterial pressure from the central end of the right femoral artery was recorded

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YAREMKO, B. R., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1971, pp 83-84

on hystographic tape. Respiration was recorded with a Marey capsule and cuffs put on the animal's chest. In addition, pressor sinocarotid reflexes were determined in response to compression of the common carotid artery for 5 and 10 sec. After inflicting the trauma, we observed the animals for 6 hours and noted the length of time they survived in shock.

Results and discussion. Initially, the average level of arterial pressure was somewhat higher in the dogs subjected to hypodynamia (series 1, 166 ± 5.4 , $P < 0.05$; series 2, 153 ± 4.2 mm) than in the control (143 ± 4.5 mm). The respiratory rate in the dogs after 28 days of hypodynamia (28 ± 4) was much slower ($P < 0.05$) than in the other series of experiments (54 ± 9 in the control and 66 ± 14 in series 1).

After a brief period of excitation that followed the inflicting of the trauma, the animals' general condition became critical. The pressor sinocarotid reflexes disappeared or underwent phase changes. Arterial pressure dropped, marked tachycardia developed, and respiration slowed. In most of the experiments, 3rd order waves appeared on the arterial pressure curve shortly after the trauma and they deepened as shock developed, disappearing 30 to 40 minutes before the animals died.

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YAREMKO, B. R., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1971, pp 83-84

To induce shock in the animals subjected to 28 days of hypodynamia required much less traumatic action ($P < 0.01$) than for all the other animals. The trauma inflicted on the dogs in series 1 and 3 was essentially the same. To induce shock, the trauma required 175 ± 24 blows in series 1, 87 ± 9 in series 2, and 140 ± 16 in series 3.

None of the hypodynamic dogs exhibited a clear-out tendency for arterial pressure to rise after receiving the trauma. General inhibition progressed and they generally died after 60 to 90 minutes. In most of the control animals, on the other hand, there was a fairly long period of relative compensation and their survival time while in shock (197 ± 30 minutes) was significantly ($P < 0.01$) longer than that of the hypodynamic dogs (68 ± 18 minutes in series 1 and 86 ± 15 minutes in series 2). Two dogs in the control came out of shock spontaneously, something that did not happen in the experiments with hypodynamia.

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USSR

YAREMKO, B. R., *Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya*, No 2, 1971, pp 83-84

Thus, prolonged hypodynamia markedly changes resistance to the extreme conditions brought about by mechanical shock-producing trauma.

The initial arterial pressure level after 14 days of hypodynamia, which was higher than in the control, was an indication of either the stronger action of the mechanisms of neuroendocrine regulation of the cardiovascular system or a weakening of the cholinergic influences on the latter. The possibility that both mechanisms might have been functioning cannot be ruled out.

Manifestations of systemic emotional stress were evident the first 2 weeks. This may explain why it was necessary to give the animals after 14 days of hypodynamia somewhat more blows than the control because the systems responsible for neuroendocrine regulation of blood circulation were already more or less nonspecifically prepared for the action of extreme stimuli. However, regardless of the duration of hypodynamia, the survival time of the animals after the trauma was much shorter than that of the control. Thus, after restriction of movements the capability of the cardiovascular system to maintain arterial pressure after a trauma, if only at the lowest level compatible with life, is limited and generalized vascular collapse quickly ensues.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--FIRST FINE OF ROQUESITE IN THE USSR -U-
AUTHOR-(02)-YARENSKAYA, M.A., SLYUSAREV, A.P.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 18(5), 1138-41
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
TOPIC TAGS--MINERAL DEPOSIT, GEOGRAPHIC LOCATION, X RAY ANALYSIS, SULFIDE,
SILVER, GOLD, INDIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1287 STEP NO--UR/0020/70/191/005/1138/1141
CIRC ACCESSION NO--AT0131742
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0131742

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ROQUESITE WAS FOUND IN DEEP HORIZONS OF A MIXED PYRITE BARITE COMPLEX ORE DEPOSIT. THE MINERALIZATION THERE WAS RELATED TO THE LATEST BORNITE TENNANTITE CHALCOCITE ASSOCN. WHERE ROQUESITE WAS PRESENT AS VERY THIN LAMINAL (0.003 TIMES 0.023-0.003 TIMES 0.07 MM) INCLUSIONS IN BORNITE. THE MINERAL HAD A GRAY COLOR WITH BLuish HUE SOMEWHAT LIGHTER THAN THAT OF SPHALERITE BUT DARKER THAN FAHLORE. IT POSSESSED A WEAK BIREFRINGENCE AND WEAK ANISOTROPY. ITS COMPN., DETD. BY X RAY MICRONANAL., WAS RECALCD. INTO THE FORMULA, $CU_{1.902}S_{2.014}$. THE BORNITE TENNANTITE CHALCOCITE ASSOCN. IN THE DEPOSIT CONSISTED OF DISSEMINATIONS IN BARITE AND VEINLETS IN EARLY FINE AGGREGATE PYRITE ORES. EACH OCCURRENCE HAS ITS OWN COMPLEX OF RARE MINERALS: STROMEYERITE, IDAITE, GERMANITE, AG, AU, AND IN SULFIDES IN DISSEMINATED ORES AND BETEKHTINITE AND MINERALS OF THE STANNITE GROUP IN VEINLETS. THEREFORE, THE SEPN. OF IN AND SN MINERALIZATION DIFFERED IN SPACE AND PROBABLY IN TIME.

FACILITY: INST. GEOL. NAUK IM. SATPAEVA, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

UDC: 621.383.8.029.65

GROSHEV, I. N., FUKS, L. B., ~~YARESHKO, Yu. P.~~, YASHCHISHIN, P. I.

"Limiting Energy Efficiency of Microwave Scanning Radio Image Converters"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 894-896

Abstract: The authors consider semiconductor radio image converters in the millimeter wave band designed for obtaining images of objects in fog. The radio image of the object in the focal plane of an optical type antenna is scanned by localized control of the conductivity of a semiconductor plate which is also located in the focal plane of the antenna. An analysis of the energy efficiency of such a scanning image converter shows that the power transmission factor is equal to -20 or -30 dB or less regardless of the design of the equipment.

1/1

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Forming

USSR

UDC 621.771.23:621.771.011

ZHELEZNOV, Yu. D., PAVLOV, I. M., YARGSTORE, P., GRIGORYAN, G. G., and FROINDEL', P., Moscow Institute of Steel and Alloys

"The Effect of Outer Parts on the Edgewise Deformation in the Light-Gauge Sheet-Rolling Process. First Report"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy --- Chernaya Metallurgiya, No 11, 1970, pp 81-85

Abstract: The interaction mechanism of outer parts with the deformation source in the process of light-gauge sheet rolling is discussed from the viewpoint of the edgewise interaction of internal longitudinal stresses. The physical interpretation of this interaction is discussed by reference to diagrams showing the alignment process of the transverse difference of thickness of a band and the relation between the irregularity of the edgewise deformation and internal stresses. Experimental data show that with increasing length of the band, the transverse difference of thickness decreases in the beginning and then becomes constant. A function is derived from which a coefficient characterizing the capacity of self-alignment from externally acting parts can be determined. A comparison of experimental and theoretical rolling data is presented.

1/1

USSR:

YAREPIL, B., Candidate of Veterinary Sciences, and YUDIN, G.A., Candidate of Veterinary Sciences, Scientific Research Institute of Animals Husbandry, Mongolian People's Republic, and All Union Institute of Experimental Veterinary Medicine

"Diagnosis of Horse Glanders"

Moscow, Veterinariya, No 6, Jun 71, pp 110-112

Abstract: Intracutaneous injection of mallein is superior to the conventional double ophthalmic mallein test for diagnosis of horse glanders. It has been used in Mongolia since 1954. In 1967 both tests were compared in a study of 666 horses at three different farms and one leasing enterprise. It was found that the intracutaneous test yield a positive reaction in 1.8 times more horses than did the ophthalmic test. It was found that the character of intracutaneous allergic reactions depends on the season of the year and the degree to which the animals are nourished. In spring, when the animals are not as fat, the reaction takes longer to appear (from 36 to 48 hours) and disappears within 24-48 hours; also, the reaction is less sharply pronounced. In another test with 1,495 horses, single and double applications of intracutaneous mallein were compared. It was found that, in general, the allergic reactions were 1/2.

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USSR

YARIMPIL, B., et al., Veterinariya, No 6, Jun 71, pp 110-112

more pronounced the second time and 2.3 times more animals exhibited a positive reaction. In a third test series, the appearance of complement-fixing substances in horse blood was studied after intracutaneous introduction of mallein. No complement-fixing substances were detected in the blood of healthy horses after introduction of mallein. Therefore the method does not interfere with subsequent serological studies of glanders.

2/2

USSR

UDC: 624.074.4.04

GOGESHVILI, A.A., YARIN, L.I., Aprelevka

"Wind Load Calculations of Inflated Cylindrical Shell"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2,
1971, pp 17-19

Abstract: An analysis is made of tensions and deformations of an inflated shell having a shape of a portion of cylinder of a certain included angle, fixed to the ground on the ends and subject to wind pressures. The wind pressure distribution is taken from the standards. The shell is assumed to have no stiffness and to be non-stretching.

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USSR

GOGESHVILI, A.A., et al, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2, 1971, pp 17-19

A system of equations is set up. Numerical solutions have been obtained by means of computers and correlated by empirical formulae.

It is shown that with the internal pressure equal to the maximum local external pressure the minimum hoop force occurs with the included angle of 140° , it changes little in the range of 110° to 180° .

The minimum amount of material per unit of floor area corresponds to the included angle of 105° .

2/2

- 12 -

USSR

UDC 533.6.08:621.375.826

YERSHOV, O. A., YERSHOVA, T. I., STOLYAROVA, N. N., and YARIN, L. P.

"A Laser Anemometer for Measuring Airflow Velocities"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 24, No 5, May 1973, pp 888-890

Abstract: A description of a laser anemometer is presented, together with some results of measurements of mean and fluctuating velocities in a free turbulent jet. It is shown that the experimental data are in good agreement with theory and with results obtained by other methods. This testifies to the effectiveness of the proposed system of a laser anemometer, and to the possibility of its use for measuring the characteristics of turbulent streams. 2 figures. 5 references.

1/1

- 107 -

USSR

UDC 532.526

VULIS, L. A., DZHAUGASHTIN, K. YE., ZHIVOV, V. G., YARIN, L. P., Leningrad

"Propagation of a Stream of Viscous Liquid in a Medium with a Density Discontinuity"

Moscow, Zhurnal Prikladnoy mekhanikifekhnicheskoy fiziki, No 3, 1972, pp 115-122

Abstract: A study was made of the propagation of laminar and turbulent streams in a medium containing a density discontinuity. The results of an experimental study of the propagation laws of flows of a viscous fluid in such a medium are discussed for variation of the Reynolds numbers in the range of $25 < R < 20 \cdot 10^3$. In addition to streams normal to the surface of the discontinuity (vertical), horizontal streams propagated along the interface of the heavy and light liquids (the discontinuity surface) were also investigated. Photographs and results are presented for measuring the dynamic pressure illustrating properties of the investigated streams which are unusual for a homogeneous environment -- suppression of turbulence, the presence of a limiting length of the stream, its anisotropy, and so on. An approximate explanation of the observed effects is presented within the framework of boundary layer theory in addition to the semiempirical theory of turbulence.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--CONNECTION OF THE HYDROXYL EMISSION WITH THE METEOROLOGICAL
CONDITIONS ABOVE YAKUTSK -U-

AUTHOR--YAFIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--PAZDEL IV, POLYARNYYE SIYANIYA I SVECHENIYE NOCHNOGO NEBA, 1970,
NR 18, PP 18-20

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--HYDROXYL RADICAL, ROTATION, METEOROLOGY, ATMOSPHERIC
TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0120

STEP NO--UR/3307/70/000/018/0018/0020

CIRC ACCESSION NO--AP0114516

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0114516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO OBSERVATIONS CARRIED OUT IN YAKUTSK 27 DAY VARIATIONS HAVE BEEN DETECTED IN ROTATION TEMPERATURE IN THE OII (9.3) BAND WHICH ARE NEARLY IN AN ANTIPHASE WITH RESPECT TO 27 DAY VARIATIONS IN THE TEMPERATURE OF ATMOSPHERE AT A LEVEL OF 50 MBAR AND THE HEIGHT OF THE ISOBARIC SURFACE OF 15 MBAR. AVERAGE MONTHLY VALUES OF INTENSITY OF ROTATION TEMPERATURE IN THE JH BAND AND OF THE TEMPERATURES AT A LEVEL OF 50 MBAR ARE IN A FAIR AGREEMENT WITH THE HEIGHT OF THE ISOBARIC SURFACE OF 15 MBAR.

UNCLASSIFIED

Acc. Nr:

AP0053885

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0038

117304e Reactions of rhenium heptoxide with sulfuric acid and sulfur dioxide. Borisova, L. V.; Varinova, T. I. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 313-16 (Russ). A pink soln. formed when Re_2O_7 was absorbed in concd. H_2SO_4 or in H_2SO_4 satd. with SO_2 . The color is due to redn. of Re(VII) to Re(VI) by SO_2 which is present in the concd. acid. The redn. occurs best at 120° in $18.5M$ H_2SO_4 . Re(VII) was not reduced in $\leq 14.5M$ acid.
HMJR

pc

REEL/FRA
19830962

18

USSR

UDC 621.039.564.2(017)(083.76)

YARITSYNA, I. A., SHCHEBOLEV, V. T., FOMINYKH, V. I., and STUKOV, G. M.

"Primary Government Standard for Neutron Flux Units"

Moscow, Izmeritel'naya Tekhnika, No 8, 1972, pp 8-11

Abstract: Beginning with 1960, when the first designs for equipment based on the method of concomitant particles were developed, work has been carried on at the D. I. Mendeleev VNIIM (All-Union Scientific Research Institute of Metrology) to set up a primary government standard for the unit of neutron flux. This standard, approved by the Committee on Standards on 13 May 1969, involves complex measurement methods using three standard devices: the UEN-1, UEN-2, and UEN-3. The basic theory of these devices is discussed and a photograph of the first instrument in an external view is reproduced. A comparison of the Soviet method with those of other nations, made in 1962-1964 using the Canadian Ra-Be (α, n) neutron source No 200-1, is described.

1/1

USSR

UDC 621.357.7(088.8)

KARPOV, P. S., PYBAL'CHENKO, M. K., TYPITSYN, G. I., and YARKIN, V. V.,
Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Electrolytic Deposition of Highly Porous Metal Layers"

USSR Author's Certificate No 324301, Filed 22 Sep 69, Published 6 Mar 72
(from Referativnyy Zhurnal -- Khimiya, Svochnyy Tom, No 23(II), 1972, Abstract
No 231269)

Translation: The patented method uses an electrolyte containing suspended insoluble metal particles. The metal particles are of the same kind as those being deposited. The particles serve as cathode with high catalytic activity. For example, in order to obtain the Ni catalyst, a nickel carbonyl powder FNK-1 is added to the H₂SO₄ electrolyte. The electrolyte composition is (g/liter): NiSO₄·7H₂O 100-150, Na₂SO₄ 40-60, H₃BO₃ 20-30, NaCl 3-5, nickel carbonyl powder 75-150. The electrolytic deposition is carried out at pH 2-5, 50°C, D_c 4-12 a/dm² with intensive mechanical mixing of the electrolyte.

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- 11 -

172 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--OXIDATION OF DIPHENYLMETHANE IN THE PRESENCE OF POLYPHENYLACETYLENE

AUTHOR--(04)-BERLIN, A.A., ASEYEVA, R.M., YARKINA, V.V., KOBRYANSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 241-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, OXIDATION, ACETYLENE, ORGANIC AZO
COMPOUND, ORGANIC NITRILE COMPOUND, CONJUGATE BOND SYSTEM, ANTIOXIDANT
ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1620

STEP NO--UR/0195/70/011/001/0241/0244

CIRC ACCESSION NO--AP0112614

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0112614

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION WAS STUDIED
 MANOMETRICALLY. POLY(PHENYLACETYLENE) (I) INHIBITS OXIDN. OF PH SUB2
 CH SUB2. INTRODUCTION PERIOD OF PH SUB2 CH SUB2 OXIDN. INCREASED
 LINEARLY WITH I CONC. ON REACTION WITH FREE RADICALS, ABSORPTION
 COEFF. OF I DECREASED AT DIFFERENT WAVELENGTHS DIFFERENTLY. BEST
 INHIBITORS ARE THE PARTS OF I MACROMOL. HAVING EXTENDED CONJUGATION.
 DURING A REACTION OF I WITH PH SUB2 CH SUB2 THE CONC. OF PARAMAGNETIC
 CENTERS IN I DECREASED. ANALOGOUS EFFECTS WERE OBSERVED WHEN I WAS KEPT
 IN THE PRESENCE OF AZOBISISOBUTYRONITRILE IN THE ABSENCE OF O.
 FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW,
 USSR.

UNCLASSIFIED

USSR

UDC 547.26'118:541.49

KURAMSHIN, I. Ya., MURATOVA, A. A., YARKOVA, E. G., MUSINA, A. A., IZMAYLOVA, F. Kh., and PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"S-Alkyl Esters of the Thio- and Dithioacids of Phosphorus (IV) and Their Complexes With Tin"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1456-1466

Abstract: A series of thio- and dithioesters of thiophosphoric and thio- and dithiophosphinic acids was synthesized and characterized. Their IR and NMR spectra were studied. It was shown that the conformational isomerism in S-methyldialkylthio- and dithiophosphinates is caused by the P-C bond rotation. Complexes of S-alkylthiophosphates and thiophosphinates with tin tetra- and alkylhalides were obtained. Their IR and NMR spectra were studied. It was shown that in solutions the complexes $[R_2P(O)(SCH_3)]_2SnX_4$ exist as mixtures of geometrical isomers. It was shown that with coordination, a redistribution of the electronic density of the P-S bond takes place on account of the inductive and mesomeric effects. Both in the free state and as complexes the thioesters $R_2P(O)(SR')$ exhibit conformational isomerism. Based on the IR and NMR data, the electron donor ability of S-methyldialkyl-dithiophosphinates in relationship to tin halides was analyzed.

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USSR

UDC 547.241:541.49

PUDOVIK, A. N., MURATOVA, A. A., KURAMSHIN, I. Ya., YARKOVA, E. G., and
VINOGRADOV, L. I., Kazan State University imeni V. I. Ul'yanova - Lenina

"Reaction of o-Methylmethylphosphones of Dialkylphosphinic and Dialkylthio-
phosphonic Acids With Stannic Chloride and Stannic Bromide"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 5, 1972, pp 979-986

Abstract: The title reaction -- for alkyl = methyl, butyl, cyclohexyl, and
phenyl -- proceeds in methylene chloride forming complexes of the general
form $[R, R'P(O)OH]_2SnX_4$ or $[RR'P(O)SH]_2SnX_4$ for equimolar mixtures of the
two starting compounds. IR studies of the products of a starting mixture
having a 2:1 ratio of reactants indicate that dimerization has occurred.
When the reaction occurs with the elimination of the halogen acids, the
salt $[RR'P(O)]_2SnX_2$ is formed which indicates an intramolecular rearrange-
ment resulting in a polymer. A number of conclusions about the nature of
these complexes were drawn from detailed NMR and IR studies.

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USSR

UDC 547.26'118:541.49

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., SAFIULLINA, N. R., MUSINA, A. A., and PUDOVIK, A. N., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Stereoisomers of Partial Esters of Phenylphosphonous Acid and Their Complexes With Stannic Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1692-1696

Abstract: Complexes of partial esters of phenylphosphonous acid with stannic chloride were synthesized yielding $[(RO)C_6H_5P(O)H]_2 \cdot SnCl_4$ where R - methyl, ethyl, n-propyl, iso-propyl, and n-butyl. A detailed analysis of IR- and PMR- spectral data was carried out. It was proposed that the stereoisomerism of these complexes is due to different orientation of the phenyl ring plane in the phenylphosphonite with respect to the P-H bond.

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Organophosphorus Compounds

USSR

UDC 547.241:541.49

PUDOVIK, A. N., KURAMSHIN, I. YA., YARKOVA, E. G., MURATOVA, A. A., MUSINA, A. A., and MAHAPOV, R. A., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Study of the Reaction of Methyl Ester and Acid Chloride of Dimethylphosphinic Acid and Their Thione Analogues With Tin Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 6, Jun 73, pp 1229-1236

Abstract: Complexes of O-methyldimethylphosphinate and acid chloride of dimethylphosphinic acid with tin tetra- and alkyl halides have been obtained and characterized. Their IR, NMR, and NGR spectra have been studied, establishing that the coordination is due to the donor properties of the phosphoryl group oxygen. It has been shown that $\Delta \nu (P=O) / \nu_0 (P=O)$ of the O-methyldimethylphosphinate and acid chloride of the dimethylphosphinic acid changes symbatically with $\sum \sigma^*$ of the substituents at the tin atom. A linear relationship has been established for the stannic chloride complexes with dimethylphosphinic acid between $\Delta \nu (P=O) / \nu_0 (P=O)$ and $\sum \sigma_p$ of the substituents at the phosphorus atom. It has been shown that the thiophosphoryl sulfur has a lower donor ability than the phosphoryl oxygen. Geometrical structure of the obtained complexes has been discussed.

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USSR

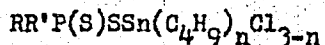
UDC 547.26'118,541.49

PUDOVIK, A. N., MURATOVA, A. A., KURAMSHIN, I. YA., and YARKOVA, E. G.,
Kazan State University imeni V. P. Ul'yanova-Lenina

"The Interaction of O,O-dimethyl Methylphosphonates With Ten Salts of the
Dithiol Acids of Phosphorous"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2408-2412

Abstract: A study was made of the acceptor characteristics of ten salts of
the title compounds having the general formula



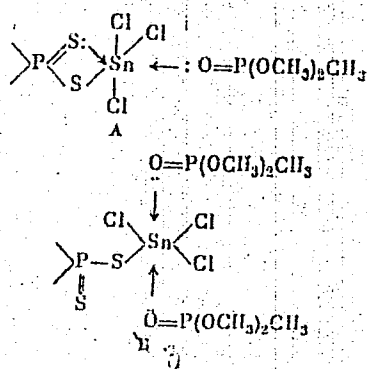
Where $R = R' = CH_3O, C_2H_5O$; $R = CH_3, R' = CH_3O$; for $n = 0, 1, \text{ or } 2$

and $R_2P(S)S_2SnCl_2$ for $R = C_2H_5$ and $C_3H_7, (C_4H_9)_nS_2Cl_{4-n}$. The former can
accept one pair of electrons and will therefore form a 1:1 complex with the
phosphorus ethers; the latter two will accept 2 pairs and therefore form
1:2 complexes with these ethers. The electron donors were dimethyl ethers of
methylphosphonic acids. Ratios of 1:1 and 1:2 of the above reagents were
used for the following reaction:

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USSR

PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2408-2412



A comparison of the spectra indicates the 1:1 complexes have a weaker tendency to dissociate than the 1:2 complexes. Preparation and physical data for the above compounds are given.

2/2

USSR

UDC 547.26'118:541.49

MURATOVA, A. A., PLEKHOV, V. P., YARKOVA, E. G., and PUDOVIK, A. N., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Deamination of N,N-Diethylamidoisopropyl Phosphite in a Stannic Chloride Complex"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 436-437

Abstract: Reaction of a 1:1 mixture of N,N-diethylamidoisopropyl phosphite and stannic chloride yields a complex -- a viscous colorless product which is stable only at low temperature. At room temperature it breaks down precipitating a white solid of the composition $(C_2H_5)_2NH \cdot SnCl_2$. Evidently a redox process occurs with the elimination of the P-N bond and formation of a secondary amine.

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USSR

UDC 547.26'118:541.49

YAREKOVA, E. G., MUSINA, A. A., PLEKHOV, V. P., MURATOVA, A. A., and
PUDOVNIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Electron Effect of an Acceptor on the Rotational Isomers of Certain
Organophosphorus Ligands"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,576-2,577

Abstract: Infrared and paramagnetic resonance spectral data on several rotational isomers of organophosphorus ligands were obtained. Specifically, the complex $[(CH_3O)C_2H_5P(O)H]_2 \cdot SnCl_4$ exhibited the presence of the 1040, 1060, and 810, 823 cm^{-1} bands, instead of the two bands ν_{C-O} (1030 and 1070 cm^{-1}) and ν_{P-O} (790 and 805 cm^{-1}) in the spectrum of the methyl ester of ethylphosphonous acid, while unexpected doublets appeared in the p. resonance spectrum of the starting ester. The existence of complexes with several different isomers of the methyl ester of ethylphosphonous acid is suggested by the spectral data. Variation in the $^3J(P-O-C-H)$ constants suggests a mesomeric effect in the case of one isomer, owing to its favorable spatial location, with corresponding reduction in length of the P-O bond and a certain loosening of the O-C bond. Other structural effects are postulated.
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USSR

UDC 547.26'118

PUDOVIK, A. N., MURATOVA, A. A., KURAMSHIN, I. Ya., and YARKOVA, E. G.,
Kazan' State University imeni V. I. Lenin-Ul'yanov

"IR-Spectral Study of the Reaction of Some Methylphosphonic Acid Chlorides
With Tin Tetrachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 317-322

Abstract: The authors investigated the reaction of stannic tetrachloride with methylmonothiophosphonic acid dichloride and with the acid chlorides of O,O'-dimethylmonothiophosphoric, O-methylmethyl-, O-n.-butylmethyl-, O-isobutylmethyl-, and O-sec.-butylmethylmonothiophosphonic acids. It is found that the donor capacity of the phosphoryl oxygen with respect to stannic chloride is greater than that of the thiophosphoryl group which increases with a reduction in the $\Sigma\sigma_p$ of the substituents at the phosphorus atom. It is shown that when O-alkylmethylmonothiophosphonic acid chlorides react with stannic chloride, formation of an unstable intermediate complex via the phosphoryl group takes place on the first stage, while thion-thiol isomerization and dealkylation takes place at the second step of the reaction.

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USSR

UDC 547.26'118

MURATOVA, A. A., YARKOVA, E. G., KURAMSHIN, I. YA., and PUDCVIK, A. N.,
Kazan' State University imeni V. I. Ul'yanov-Lenin

"Study of the Reaction of Phosphorus Monothioacids With Tin Tetrahalides"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1668-1672

Abstract: For purposes of establishing the coordination center in monothio-phosphoric acid esters during their reaction with tin tetrahalides, the authors studied the IR spectra of complexes of O,O-diethyl-, O,O-di-butyl-monothio phosphates and O-methyl methylmonothio phosphonate with stannic chloride and bromide, as well as the complex of O,O,S-triethyl thiophosphate with stannic chloride. It was found that complexing is due to donor properties of the oxygen of the phosphoryl group. The absorption bands of complexes of the acids with stannic chloride and bromide at 2470-2500 cm^{-1} and solutions in chloroform and carbon tetrachloride at $\sim 2570 \text{ cm}^{-1}$ and solutions in benzene at $\sim 2520 \text{ cm}^{-1}$ are assigned to stretching vibrations of the sulfhydryl group.

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USSR

UDC 547.26'118:541.49

PUDOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., and YARKOVA, E. G., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Study of the Reactions of Phosphonite and Phosphinite Esters With Tin Tetrachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 766-771

Abstract: The reactions of trivalent-phosphorus-acid esters with SnCl_4 were carried out at a molar ratio of 2:1 in pentane or benzene at 0 to -15° under CO. When the precooled starting materials were combined, an exothermic reaction took place leading to the formation of crystalline products in most cases. It was determined that the reactions of ethyl-, phenylphosphonic, ethylphenyl-, and diphenylphosphinic acids with SnCl_4 occur in three stages: formation of the complexes $[\text{RR}'(\text{R}'\text{O})\text{P}]_2 \cdot \text{SnCl}_4$, followed by their isomerization to $[\text{RR}'\text{R}''\text{P}:\text{O}]_2 \cdot \text{SnCl}_4$, and in case of phosphonic acid complexes, elimination of alkyl halides with the formation of a P-O-Sn compound. The ease with which the first step occurs decreases in order of substituents: ethyl-, phenylphosphonic, phosphorous, ethylphenyl-, and diphenylphosphinic acid. The products are donor-acceptor type complexes in which the coordinate bond is formed by the phosphorus atom's unshared pair of electrons.

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USSR

UDC 547.26'118

MURATOVA, A. A., KURAMSHIN, I. Ya., YARKOVA, E. G., and PUDOVNIK, A. N.,
Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reaction of Some Dithiophosphorus Acids With Tin Tetrahalides"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1967-1972

Abstract: A study is presented of the reaction of 0,0-dialkyldithiophosphoric (Alk=CH₃, C₂H₅, iso-C₄H₉) and 0-methylmethyldithiophosphonic acids with tin chloride and bromide in 2:1 and 1:1 ratios. The reaction results in the formation of products of the composition R(R')P(S)SSnX₃. The reaction of 0,0-dimethyldithiophosphoric acid with tin bromide results in thione-thiol isomerization concurrent with elimination of hydrogen bromide. It is shown that the donor capacity of thiophosphoryl sulfur of R(R')P(S)S- to trichloro- and tribromotin salts increases with an increase in the total +I effect of the substituents at the phosphorus atom. The dissolution of the 0,0-dimethyldithiophosphoric acid -- tin bromide system in chloroform is attended by a considerable drop in the absorption intensity at 1150 cm⁻¹ and an increase of absorption in the 3000-3600 cm⁻¹ region which points to dissociation of the isomerized complex. These spectral changes suggest that the free 0,S-dimethyldithiophosphoric acid in chloroform is primarily of a thion form, which correlates well with literature data.

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USSR

UDC 547.26.118

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., MUSINA, A. A.,
PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin,
Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Study of the Complexes of Tin Halides With Incomplete Esters of
Ethylphosphonous and Dialkylphosphinous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 1978-1982

Abstract: Complexes of tin tetrachloride, tetrabromide, and tetra-
iodide with methyl, ethyl, n-propyl, isopropyl, and n-butyl esters
of ethylphosphonous acid and of tin tetrachloride with di-n-butyl,
di-n-hexyl and di-n-octylphosphonous acids were synthesized and
studied by IR spectroscopy. Comparison of the IR spectra of
phosphonous and phosphinous acids and their complexes with tin
tetrahalides in the range of 400-4000 cm^{-1} shows that the type of
changes observed is analogous to spectral changes of the dialkyl-
phosphorous acids and their complexes. Consequently, all of them
participate in these complexes in their pentavalent state. It was
1/2

- 05 -

USSR

MURATOVA, A. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 1978-1982

shown that the coordination bond is through the oxygen of the phosphoryl group. The P-H bond was found to be sensitive both to the changes in the structure of the addendum and towards the ability of tin halides to act as electron acceptors.

2/2

USSR

UDC 541.6+541.49

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

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

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

Abstract: IR spectra were studied of S-ethyl diethylthiophosphinite (I), S-n-propyl diethylphosphinite (II), diethylchlorophosphine (III), diethyl sulfide (IV) and tributylphosphine (V) in liquid state using solvents with different polarity. Analysis of the data on (I) and (II) indicated that these compounds exist as mixtures of two conformers arising from the rotation around the P-C bond, even though the rotation around the S-C bond could not be excluded. Following complexes were synthesized and studied: $[(C_2H_5)_2PR]_2SnCl_4$ where $R=C_2H_5S$, $n-C_3H_7S$, $[(C_2H_5)_2S]_2SnCl_4$ and $[(C_4H_9)_3P]_2SnCl_4$. These complexes were formed because of the donor properties of the phosphorus atom.

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USSR

UDC 547.26'118:541.49

PUDOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., YARKOVA, E. T., and LOGINOVA, E. I., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Investigation of the Reaction of Diethylphosphinous Acid Esters With Trialkyl and Dialkyl Halides of Tin"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 327-333

Abstract: The authors study reactions of methyl, ethyl, n-propyl, isopropyl, n-butyl and n-hexyl esters of diethylphosphinous acid with triethyl and diethyl chlorides, bromides and iodides of tin. It was found that diethylphosphinous acid esters react with trialkyl and dialkyl halides of tin to form stable complexes containing trialkylphosphine oxide and an alkyl halide of tin. As the radical of the alkoxy group increases, the reactivity of the phosphinite in these reactions decreases. The activity of alkyl halides of tin drops with a transition from dialkyl to trialkyl halides, and also with a transition from iodine to chlorine derivatives of tin.

1/1

Radiobiology

USSR

UDC 577.391:612.273

SVERDLOV, A. G., MARTYNCHIK, Yu. F., and YARKOVETS, A. G., Physical-Technical Institute imeni A. F. Ioffe, Academy of Sciences USSR, Leningrad

"Study of the Relationship Between the Hypoxic and Protective Effects of Some Radioprotective Agents"

Moscow, Radiobiologiya, No 2, 1972, pp 221-228

Abstract: Mice were treated with various protective agents (serotonin, mexamine [a serotonin analog], cysteamine, AET, α -methyltryptamine, and some other drugs) to determine their effects on pO_2 in the spleen and muscles and the relationship of these parameters to the survival time of the animals after single whole-body irradiation at 700 r. Mexamine and serotonin lowered the pO_2 level of the tissues studied but there was no correlation with the protective effect of the indolylalkylamines, for large doses had the same effect as moderate ones, even though the former produced hyperoxia and the latter hypoxia. An antagonist of these agents, α -methyltryptamine, injected 30 min prior to mexamine, did not protect the animals despite the hypoxic effect induced by the serotonin analog. Sulfur-containing agents like cystamine and AET decreased pO_2 in some animals and increased it in others, but the postirradiation survival time was the same in both groups. Thus, there is

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USSR

SVERDLOV, A. G., et al., Radiobiologiya, No 2, 1972, pp 221-228

no relationship between the hypoxic and protective effects of substances like
mexamine and serotonin and their mechanism of action is obviously not based on
hypoxia alone. And in the case of sulfur-containing compounds its role is
insignificant.

Radiobiology

USSR

SVERDLOV, A. G., MARTYNCHIK, Yu. F., BOGATYREV, A. V., and YARKOVETS, A. G.

"The Effect of Increased Atmospheric Pressure on the Protective Effect of Some Radioprotectors"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

Abstract: Although the mechanism of chemical protection against ionizing radiation is still unexplained, the prevailing hypothesis implicates the hypoxic effect of basic radioprotectors. Yet there is mounting evidence that does not correspond to this hypothesis, including results of research on the protective effectiveness of radioprotectors in conditions of increased oxygen partial pressure (pO_2) in tissues. The protective effectiveness of radioprotectors of various classes was studied under conditions of increased atmospheric pressure, and the effect of radioprotectors on pO_2 in mouse spleen and muscle was observed. The dose power of Co^{60} irradiation was 9.9 r/min. Doses of 1,000 r (DL_{80/30}) were administered. Twenty percent of the mice survived, apparently because of prolonged irradiation (101 min). The muscle and spleen pO_2 were measured during irradiation in batches of 20 mice. The mice were closely confined, obviating tying and narcosis. Indicators were

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USSR

SVERDLOV, A. G., et al, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

platinum electrodes, open type, 0.2 mm in diameter, inserted in the hip muscle and spleen: inert silver chloride electrodes were inserted into the rectum. Radioprotectors were intraperitoneally injected in the following mg/kg doses: mexamine 50; cystamine 150; cystaphos 350, aminoethylisothiuronium (AET) 150. Pressure was increased after 10 minutes. Irradiation was begun in the 6th min at 7 atm. After injection of protectors into the spleen, changes in pO_2 levels occurred which were specific for each preparation. Mexamine, in the first 10 minutes, produces pO_2 decrease of 50% and cystamine and AET -- 30%, while cystaphos slightly raises pO_2 by about 5%. As pressure increased, tissue pO_2 also increased. The pO_2 increase continues for 5-10 minutes at a maximum, exceeding initial values 2-3 times, and remains at this level. During decompression pO_2 shifts are reversed, so that at normal atm spheric pressure the pO_2 returns to initial level. This suggests that the hypoxic action of the radio protector is masked by increased atm spheric pressure, but can again be observed at normal pressure. Test results for muscle are analogous to those for the spleen. It was found that the protective effect

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USSR

SVERDLOV, A. G., et al, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

of all radioprotectors at increased pressure remained the same as at normal pressure, despite the sharp rise of tissue pO_2 during irradiation. Some of the results are statistically unreliable. Thus hypoxia does not decrease the radioprotective effect in the examined compounds.

3/3

1/2 023
UNCLASSIFIED
TITLE--INELASTIC LOSSES OF ENERGY BY SLOW IONS IN SOLIDS -U- PROCESSING DATE--27NOV70
AUTHOR--YARKULOV, U.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. UNAK UZB. SSR. SER. FIZ.-MAT. NAUK 1970, 14(2), 69-72
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PROTON, ION, SHELL STRUCTURE, ATOM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0571 / STEP NO--UR/0166/70/014/002/0069/0072
CIRC ACCESSION NO--AP0137656
UNCLASSIFIED

2/2 -028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MATH. CONSIDERATIONS REVEAL THAT ENERGY LOSSES BY PROTONS DEPEND NONMONOTONICALLY ON THE PARAMETER Z SUB2 IN THE THOMAS FERMI EQUATION, RELATED TO THE SHELL STRUCTURE OF THE ATOM OF THE RETARDING SUBSTANCE. TASHKENT, USSR.

FACILITY: INST. YAD. FIZ.,

UNCLASSIFIED

USSR

UDC 666.112.5

YARLOVA, K. S., MINASYAN, G. S., ABOVYAN, M. M. and MKHEYAN, L. O.,
Byurakan Optico-Mechanical Laboratory, Academy of Sciences, Armenian SSR,
and Scientific Research Institute of Rocks and Silicates

"Glass"

USSR Author's Certificate No 366155, Filed 9 Nov 70, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 7,
Mar(a) 73, Claim No 1490339/29-33)

Translation: A glass including SiO_2 , Al_2O_3 , Fe_2O_3 , CaO , MgO and TiO_2 , distinguished by the fact that in order to increase the coefficient of reflection and decrease the coefficient of thermal expansion it contains the above components in the following quantities, weight %: SiO_2 50-60, Al_2O_3 18.2-19.2, Fe_2O_3 10.9, CaO 1.04-1.05, MgO 5-7.2, TiO_2 1.6-1.7 and F 3-3.5.

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USSR

YARLYKOV, M. S. and CHERNYAKOV, M. V.

"Suboptimal Approach for Noncoherent Signals in Asynchronous Address Systems with Frequency-Time Coding"

Probl. Peredachi Inform. [Problems of Information Transmission], 1973, 9, No 2, pp 43-52 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V475)

Translation: On a Bayes basis, using methods of optimal statistical decisions, a suboptimal receiver is synthesized for noncoherent signals in an asynchronous address system with frequency-time coding. The signal is studied in the presence of additive white noise and pulse noise within the system, approximated by a Poisson stream. Modulation of signals by the message transmitted is assumed various, and their initial phases are considered random, distributed evenly between $-\pi$ and π .

Author's view

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USSR

UDC 621.391.2

YARLYKOV, M.S.

"Optimum Reception Of Phase Noise Distorted Signals"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol XIV, No 10, 1971, pp 1172-1182

Abstract: On the basis of the theory of nonlinear filtration in a Gaussian approximation, optimum radio receivers are synthesized for the cases where the transmitted communications are narrow-band and wide-band differentiable components of continuous Markov processes. Such optimum radio receivers are of practical interest in radio remote control, radar, and radiotelemetry. Formulas for the errors of filtration are derived. Block diagrams are presented of optimum receivers of pulse radio signals in the case of wide-band and narrow-band differentiable communication. Received by editors 21 Dec 70. 7 ref. 2 fig.

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USSR

UDC 621.391.2

YARLYKOV, M. S.

"Bayes Estimates in Problems of Nonlinear Filtration of Nonstationary Radio Signals"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1374-1384

Abstract: Bayes estimates are constructed for the case where observed data are nonlinearly dependent on the unknown parameters of non-Gaussian non-stationary signals. The solution is found by means of recurrent relations for the a posteriori probability density of the parameters being estimated. General equations are derived in the Gaussian approximation for the quantities being evaluated and the second central moments of unknown quantities. The useful signal is observed both against a background of white noise and in correlation Markov interference. Typical examples are considered from the area of radio communications and radar as applied to the synthesis of optimum filters for isolation of unknown parameters, formulas are derived for the errors in estimates of parameters, and graphs are plotted. It is found that the relative error in evaluation of signal delay time depends not only on the signal-to-noise ratio at the input of the filter and the time of observation, but also on the parameters of the radio pulses. The
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USSR

YARLYKOV, M. S., Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp
1374-1384

optimum detector consists of a synchronous detector, a parametric device for filtration of video signals, and a phase AFC system. As the time of observation increases, the transmission gain of the filter decreases monotonically to zero. The voltage across the output of the integrator determines the parameter to be estimated.

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1/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--FILTERING COMMUNICATIONS WITH TYPICAL ENERGY SPECTRA BY OPTIMAL

RECEIVERS -U-

AUTHOR--YARLYKOV, M.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 950-959

DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--RADIO RECEIVER, RADIO TRANSMISSION, SIGNAL TRANSMISSION, MARKOV PROCESS, STOCHASTIC PROCESS, GAUSSIAN DISTRIBUTION, RF FILTER, PULSE AMPLITUDE MODULATION, PULSE WIDTH MODULATION, ENERGY SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0577

STEP NO--UR/0109/70/000/005/0950/0959

CIRC ACCESSION NO--AP0132748

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER SOLVES THE PROBLEM OF SYNTHESIZING OPTIMAL RADIO RECEIVERS UNDER THE ASSUMPTION THAT THE TRANSMITTED COMMUNICATION IS A RANDOM MARKOV PROCESS DESCRIBED BY A SYSTEM OF STOCHASTIC EQUATIONS. THE SOLUTION IS OBTAINED BY THE METHOD OF OPTIMAL NONLINEAR FILTRATION IN THE GAUSSIAN APPROXIMATION. THE SIGNALS ARE FILTERED IN ADDITIVE NOISE. OPTIMAL FILTRATION EQUATIONS FOR COMMUNICATIONS WITH TYPICAL ENERGY SPECTRA, AND ERROR FORMULAS ARE OBTAINED. THESE EQUATIONS ARE USED FOR THE CASE IN WHICH THE USEFUL SIGNAL IS A SUCCESSION OF PULSES, AND THE OPTIMAL RECEIVER FOR SUCH A SIGNAL IS DERIVED. THE BLOCK DIAGRAM OF THIS OPTIMAL RECEIVER IS GIVEN. A COMPARISON IS MADE OF THE NOISE IMMUNITY OF PULSE SYSTEMS FOR PULSE AMPLITUDE MODULATION, PULSE WIDTH MODULATION, AND PULSE TIME MODULATION. THE AUTHOR CONCLUDES THAT THE STRUCTURE OF AN OPTIMAL RECEIVER FILTERING A TWO DIMENSIONAL MARKOV PROCESS WITH A TYPICAL ENERGY SPECTRUM DIFFERS FROM THAT OF AN OPTIMAL RECEIVER FILTERING A UNIDIMENSIONAL MARKOV PROCESS ONLY BY THE LINEAR FILTER.

UNCLASSIFIED

USSR

UDC: 621.391.2

YARLYKOV, M. S."Optimum Reception of Signals with Intrapulse Frequency Modulation"Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 92-103

Abstract: On the basis of the theory of conditional Markov processes, a solution is found for the problem of synthesizing optimum receivers of pulse radio signals with intrapulse frequency modulation and various types of primary modulation. The solution is found by the method of optimum nonlinear filtration in the Gaussian approximation. Signal filtration is carried out against a background of both additive and non-additive interference. The messages being transmitted are represented as one-dimensional or two-dimensional continuous Markov processes. The optimum receiver is required to track the maximum a posteriori probability density of the parameter being measured, which means filtration in accordance with the criterion of minimum mean square error. Detailed consideration is given to the case where the message being transmitted is included in the pulse signal delay time and the carrier frequency varies according to a linear law. The resultant expressions for mean square errors of filtration can be used to evaluate the accuracy of pulse systems under conditions of additive and non-additive interference.

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- 75 -

USSR

UDC: 621.391.2

YARLYKOV, M. S.

"Filtering Communications with Typical Energy Spectra by Optimal Receivers"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 950-959

Abstract: This paper solves the problem of synthesizing optimal radio receivers under the assumption that the transmitted communication is a random Markov process described by a system of stochastic equations. The solution is obtained by the method of optimal nonlinear filtration in the Gaussian approximation. The signals are filtered in additive noise. Optimal filtration equations for communications with typical energy spectra, and error formulas are obtained. These equations are used for the case in which the useful signal is a succession of pulses, and the optimal receiver for such a signal is derived. The block diagram of this optimal receiver is given. A comparison is made of the noise immunity of pulse systems for pulse-amplitude modulation, pulse-
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USSR

YARLYKOV, M. S., Radiotekhnika i Elektronika, No 5, 1970, pp 950-959

width modulation, and pulse-time modulation. The author concludes that the structure of an optimal receiver filtering a two-dimensional Markov process with a typical energy spectrum differs from that of an optimal receiver filtering a unidimensional Markov process only by the linear filter.

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- 144 -

Organ and Tissue Transplantation

USSR

UDC: 616.12-089.843-089.168

FAL'KOVSKIY, G. E., KAZAKOV, E. N., YABLYKOVA, Ye. I., ASTRAKHANTSEVA, G. I.,
ALEKSEYEVA, L. A., KOBKOVA, I. D., SOKOLOV, M. V., GALANKINA, I. Ye., BOL'SHUKHINA,
L. A., and GUDKOVA, R. G., Institute of Cardiovascular Surgery imeni A. N. Bakulev,
Academy of Medical Sciences USSR, Moscow

"The fate of an Heterotopic Heart Allotransplant"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6, Nov/Dec 70, pp 3-12

Abstract: Donor hearts transplanted to the iliac arteries of recipient dogs survived up to 16 days. The causes of cessation of transplant function during the first 48 hours were surgical complications (death of the recipient from the anesthetic, hemorrhages from the sutures, thrombosis). In the absence of such complications, the transplants continued to function 3 to 12 days average, (1.75 days) when immunodepressants were not used, and 3 to 8 days (average, 6.16 days) when they were. Cardiac arrest was preceded by arrhythmias, a decrease in voltage of the ventricular complex, and increase in lymphocytes in the peripheral blood following leukopenia. Immunomorphological changes in the recipient's lymphatic system preceded the morphological signs of rejection in the transplant (pronounced lymphoid-histiocyte infiltration, changes in the arteris, and metabolic disturbances in the myocardium).

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1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF RHEOPOLYGLUCIN ON METABOLIC PROCESSES IN THE ORGANISM -U-
AUTHOR--(05)-STEPANYAN, YE.P., POSPELOVA, YE.P., YARLYKOVA, YE.I.,
SHUKKALINA, T.KH., RYUMINA, YE.N.
COUNTRY OF INFO--USSR
SOURCE--EKSP. KHIR. ANESTEZIOL. 1970, 15(1), 40-4
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DEXTRAN, MOLECULAR WEIGHT, BLOOD PLASMA, BLOOD CHEMISTRY,
PROTEIN, FIBRINOGEN, CALCIUM COMPOUND, BLOOD VOLUME, MYOCARDIUM, ENZYME
ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/TFRAME--3004/0476

STEP NO--UR/0481/70/015/001/0040/0044

CIRC ACCESSION NO--AP0151111

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC. ACCESSION NO--AP0131111

ABSTRACT/EXTRACT--(U) GR-C- ABSTRACT. RHEOPOLYGLUCIN (A PHARMACEUTICAL PREPN. OF DEXTRAN, WITH MOL. WT. 35,000-40,000), INFUSED IN DOGS AT 10, AND 30 MG-KG PRODUCED SLIGHT, AND AT 50 MG-KG PRONOUNCED, DECREASES IN THE CONC. OF TOTAL PROTEINS, FIBRINOGEN, AND CA PRIME2 POSITIVE IN PLASMA; A TRANSIENT 50PERCENT INCREASE IN THE VOL. OF CIRCULATING BLOOD WAS ALSO OBS. AT 50 MG-KG, A 50PERCENT DECREASE IN THE OXIDATIVE PHOSPHORYLATION OF MYOCARDIAL TISSUE AND DISTURBANCES OF THE ELECTROLYTE BALANCE WERE EVIDENT. FACILITY: INST. SERUECHNO-SOSUDISTOI KHIR. IM. BAKULEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.384.015.42

STEPANYAN, YE. P., POSPELOVA, YE. P., YARLYKOVA, YE. I., SHURKALINA, T. KH., RYUMINA, YE. N., SAVETSOV, I. M., LOGINOVA, L. I., and KOLESNIK, T. F., Biochemistry Laboratory, Institute of Cardiovascular Surgery imeni A. N. Bakulev, Academy of Medical Sciences USSR.

"Experimental Data on the Effects of Rheopolyglucine on the Metabolic Processes"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, 1970, pp 40-44

Abstract: Rheopolyglucine is a Soviet analog of dextran. In experiments on dogs, doses of 10 and 30 ml/kg of body weight had little effect on the biochemical indices studied (volume of circulating blood, sugar content, total protein, K, Na, and Ca electrolytes, etc.). Larger doses (50 ml/kg) produced more significant effects. Low and moderate doses of the plasma substitute reduced the total plasma protein and lowered the fibrinogen and calcium levels, shifts caused partly by dilution of the blood. However, the fact that these shifts were more substantial after the 50 ml/kg dose, and that oxidative phosphorylation and the electrolyte balance were disrupted at this

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USSR

STEPANYAN, YE. P., et al., Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, 1970, pp 40-44

dilution in the myocardial tissues, suggests that large amounts of rheoglucine impair physiological homeostasis. Despite these disturbances, no functional or morphological complications in animal organs were observed in any of the experiments.

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USSR

UDC 621.397

SOLOVEYCHIK, I.YE., DRAEKIN, R.I., YARMARKIN, K.K., LEUSSKAYA, G.V.,
SHARGORODSKAYA, F.M., KORNIENKO, G.G., TSEDIK, A.S.

"Electronic Device For Information Display"

Elektrosvyaz¹, No 1, Jan 1972, pp 59-63

Abstract: The paper describes an information display device of the desk type, intended for operation with an electronic computer through a telegraph communication channel. A block diagram of the device and the basic parameters of the unit are presented. The authors report that a new information display device was developed on the basis of the unit described, but few details are given. (An exterior view of the device is shown on the journal cover.) In the new device it is possible to reproduce 512 symbols (16 lines, 32 symbols to the line) of an ELT231K9B screen. The set of reproducible symbols includes the Russian alphabet, figures, and special symbols--altogether 64 symbols. With an individual keyboard which has 47 figure-letter keys and 21 functional, it is possible to feed information into an electronic computer and to accomplish complete editing of the text with the aid of an electronic carriage (marker). The device contains a special exchange unit which makes it possible to operate with an electronic computer in GOST 10859-64 code and in code MTK-2. In addition, this unit provides coupling with the "Minsk-32" computer for the slow channel. 5 fig. 1 tab.

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USSR

UDC 617-001.36-06:612.766.27-07:616.
12-008:1-072.7

~~YARMENKO, B. R.~~, Department of Pathological Physiology (Professor V. K. Kulagin, Chief) of the Military Medical Academy imeni S. M. Kirov, Leningrad

"Certain Peculiarities of the Reactivity of the Cardiovascular System in Dogs After Prolonged Hypodynamia Under the Effect of Mechanical Shock Trauma"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 9, Sep 71, pp 27-29

Abstract: Hypodynamia was induced for 14 days in 10 dogs, and for 28 days in eight dogs, kept in special cages markedly restricting their mobility. The dogs were then subjected to shock producing trauma, as were 13 control animals. Resistance to the sequelae of traumatic shock was lowered in all animals subjected to hypodynamia, while after 28 days of hypodynamic resistance was reduced to the actual trauma also. Development of traumatic shock is characterized by its rapid course and irreversibility, and in its last stages the transfusion of a much greater amount of blood-substituting fluids was required to restore arterial pressure in the animals after hypodynamia.

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USSR

UDC 51

YEREMENKO, B. A., VALOVOY, B. N., YARMILKO, V. G., TAVARTKILADZE, YA. N.,
GAKHARIYA, K. T.

"Control Algorithms for the Diffusion Process of Sugar Beet Production"

V sb. Prom. kibernetika, (Industrial Cybernetics -- collection of works), Kiev,
1971, pp 256-260 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V55i)

No Abstract

1/1

USSR

UDC 66.085.3/.5:678.742.2

P'YANKOV, G. N., KABANCHI, A. N., GOLODNIY, YU. F., BRASHKIN, M. A., LOPATIN, I. P., YARMILKO, YE. G., and BORDIKOVA, A. N., Institute of Physical Chemistry, Acad. Sc. UkrSSR

"Experimental Line for the Production of Radiation Modified Polyethylene Tubes UR-0.4T"

Kiev, Khimicheskaya Tekhnologiya, No 2 (62), Mar-Apr 72, pp 50-52

Abstract: An experimental line has been constructed for the production of radiation modified polyethylene tubes. The novelty of this process is in the irradiation method. The tubes pass repeatedly through the irradiation zone in a spiral pattern, with alternating directions of the rotation, so that exposure is uniform to the radioactive source, and damage due to the radiation heat is minimal. As an example, a tube 6 mm in diameter, wall thickness up to 0.5 mm, moving at a velocity of 2m/min, after 6 passages through the chamber picks up a dose of 45 Mrads.

USSR

UDC 546.681:181.1-162.2

YARMOLA, T. M., Institute of Problems of Materials Studies,
Academy of Sciences Ukr SSR

"Production of Gallium Phosphide Plate Crystals by Reaction of
Phosphine With Gallium"

Leningrad, Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71,
pp 2306-2308

Abstract: Gallium phosphide is one of the most promising semi-conductors; it is presently produced by a variety of methods. The chemical methods yield gallium phosphide only in powder form. The well known direct methods include two stages which contribute to contamination. A new method is discussed of producing GaP plate crystals. The new technique, intermediate between chemical and direct synthesis, makes it possible to retain the advantages of the other methods (low operating temperatures and pressures, one-stage procedure combining crystallization with alloying) as well as minimize their drawbacks. The new procedure involves gallium phosphidization with phosphine and is close to that of gallium phosphide
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USSR

YARMOLA, T. M., Zhurnal prikladnoy khimii, Vol 64, No 10, Oct 71, pp 2306-2308

crystallization from a molten solution of GaP in Ga. Gallium phosphidization in elundum tubes instead of silicon containers precludes contamination with silicon. The process is described in great detail and the operating flow chart for gallium phosphidization is shown. The comparative spectral analysis of the newly produced GaP plate crystals and those produced at the Physicotechnical Institute imeni Ioffe showed the same content of uncontrolled impurities, with the exception of silicon which was considerably lower. The new GaP crystals revealed photoluminescence in the IR region at 77°K. The presence of luminescence is indicative of the purity of the material.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CRYSTALLINE GALLIUM PHOSPHIDE -U-
AUTHOR--YARMOLA, T.M.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,083.
REFERENCE--OTKRYTIYA, IZJBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47
DATE PUBLISHED--09MAR70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--GALLIUM PHOSPHIDE, CHEMICAL PATENT, PHOSPHIDE, CRYSTAL,
HYDRIDE, PHOSPHORUS COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1439 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0126970
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRYST. GA PHOSPHIDE IS PREPD. BY
BUBBLING PH SUB3, DILD. WITH H, THROUGH A GA MELT AT 110-500DEGREES.
FACILITY: ORDENA TRUDOVOGO KRASNOGO ZNAMENI INSTITUT PROBLEM
MATERIALOVEDENIYA AN UKRAINSKOY SSR.

UNCLASSIFIED

Acc. Nr: **AP0049330** Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:
UR0226

105141m Production technique for sintered samples from gallium and indium phosphides. Yarnola, T. M. (Inst. Probl. Materialoved., Kiev, USSR). ~~Phys. Met.~~ *Phys. Met.* 1970, 10(1), 58-9 (Russ). Techniques are described for prepg. sintered semiconductor samples from Ga and In phosphide powders by compaction without a binder, at a pressure of 8 tons/cm²; these powders

were sintered in an ampul at a P content such that at the sintering temp. a pressure is formed sufficient to prevent sample decompn. The sample porosity was studied as a function of the sintering temp. and the particle size of the initial powder.

S. A. Mersol -

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REEL/FRAME
19801147

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Powder Metallurgy

USSR

~~YARMOLA, T. M.~~ Institute for Problems of Material Science, Academy of Sciences
UkrSSR

"Technology of Producing Cermet Samples from Gallium and Indium Phosphides"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan 70,
pp 56-59

Abstract: A description is given of an investigation conducted for the purpose of developing a method for producing cermet samples from gallium and indium phosphides. A specially designed sintering setup was used. A schematic diagram and a brief description of the set-up are included. Phosphide powders were compacted without the application of a binding material at 8 tons/cm² pressure, then sintered in quartz ampoules with a phosphorus suspension. At the sintering temperature the pressure prevented decomposition of the sample. The effect of sintering temperature, phosphorus pressure in the ampoule, and size of GaP particles on pellet density was investigated. The porosity of samples with an average particle size from 10 to 50 micrometers decreased from 23 to 17% when temperature was increased from 1100 to 1250°C. The samples obtained are electrically homogeneous and suitable for physical tests and machining. A further

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YARMOLA, T. M., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 56-59

increase in mechanical strength can be obtained by selecting the optimal particle size. Orig. art. has: 3 figures and 4 references.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NATURE OF THE DEPOSITS FORMED BY THE DISSOLUTION OF METALLIC
URANIUM IN OXYGEN FREE ACIDS -U-
AUTHOR--YERMOLAYEV, M.I.
COUNTRY OF INFO--USSR
SOURCE--ZHUR. NEORG. KHIM., MAR. 1970, 15, (3), 745-748
DATE PUBLISHED---MAR70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--URANIUM, PHOSPHORIC ACID, HYDROCHLORIC ACID, THERMAL
DECOMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0257 STEP NO--UR/0078/70/015/003/0745/0748
CIRC ACCESSION NO--AP0124019
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0124019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE DEPOSITS FORMED BY THE DISSOLUTION OF METALLIC U IN HCL, HBR, AND HI WAS STUDIED. THESE DEPOSITS DISSOLVED EASILY IN ANHYDROUS PYROPHOSPHORIC ACID, THEIR DISSOLUTION BEING ACCOMPANIED BY THE EVOLUTION OF H₂. ON HEATING IN AN H₂ ATMOSPHERE AT CONSTANT PRESSURE THE DEPOSITS DECOMPOSED INTO H₂ AND METALLIC U AT 456-460DEGREESC, I.E., AT THE TEMP. NORMALLY CORRESPONDING TO THE DECOMPOSITION OF UH SUB3. THE DISSOLUTION OF METALLIC U IN HCL AND ITS ANALOGUES WAS APPARENTLY ACCOMPANIED BY A PROCESS OF HYDROGENATION.

UNCLASSIFIED

USSR

UDC: 6 81.3.06:51

PETRASHEVSKIY, O. L. and YARMOLENKO, A. M.

"Solving Systems of Nonlinear Algebraic Equations by the Method of Variation of Parameters"

Kiev, V sb. Mashiny dlya inzh. raschetov (Machines for Engineering Computations--collection of works) 1973, pp 13-19 (from RZh-- Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B98)

Translation: A program is given for solving a system of n nonlinear algebraic equations $f_i(y_1, \dots, y_n) = 0$ with the initial conditions $x_i(t) |_{t=0} = x_i^0$ by the method of variation of parameters. Programs are presented for solving two control examples. N. V.

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USSR

UDC 616.61-089.843

~~YARMOLINSKIY, I. S.~~, and NEVZOROVA, T. N., Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Long-Term Results of Cadaver Kidney Transplant Operations"

Leningrad, Vestnik Khirurgii imeni I. I. Grekov, No 10, 1971, pp 96-101

Abstract: Follow-up of 24 persons who received cadaver kidney transplants for 4½ years showed that the transplant was functioning adequately in 19 (4 died as a result of rejection or pyelonephritis, 1 survived despite rejection). Clearance of endogenous creatinine, water-electrolyte balance, concentration function, hematopoiesis, arterial pressure, and renographic data in most of the patients were the same as in persons with a single healthy kidney. However, the immunological reactions even in the most favorable cases could not be completely halted and the regenerative and compensatory processes under conditions of immunodepressive therapy were sluggish, resulting in some pathological changes in the transplant. Among the frequent late postoperative complications were proteinuria, pyelonephritis, rejection crises, hepatitis, infectious diseases, and diabetes. Hence individuals receiving cadaver kidney transplants must be kept under constant observation in a specialized facility.

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1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE REACTION TO HEMODIALYSIS IN THE EARLY POSTOPERATIVE PERIOD
IN PATIENTS AFTER TRANSPLANTATION OF THE KIDNEY -U-
AUTHOR--(03)-YARMOLINSKIY, I.S., LEVITSKIY, E.R., GORYAYNOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 83-88
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIALYSIS, KIDNEY, ORGAN TRANSPLANT, CARDIOVASCULAR SYSTEM,
HEMORRHAGE, HYPERTENSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0068 STEP NO--UR/0497/70/043/004/0083/0088
CIRC ACCESSION NO--AP0132362
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132362
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN 20 PATIENTS AFTER TRANSPLANTATION OF CADAVERIC KIDNEY IN THE EARLY POSTOPERATIVE PERIOD 117 HEMODIALYSES WERE PERFORMED DURING WHICH THERE WERE NOTED SUCH COMPLICATIONS AS: PYROGENIC REACTION, CARDIOVASCULAR INSUFFICIENCY, HEMORRHAGE, HYPERTENSION. STERILIZATION BY BOILING PRODUCES THE LEAST NUMBER OF PYROGENIC REACTIONS. CARDIOVASCULAR INSUFFICIENCY WAS OBSERVED IN 3 OUT OF 20 PATIENTS AND IN ALL CASES TERMINATED LETHALLY. HEMORRHAGE OCCURRED ONLY WHEN HEMODIALYSIS WAS CARRIED OUT WITH GENERAL HEPARINIZATION (IN 3 OUT OF 5 CASES); IN THE REMAINING 112 HEMODIALYSES WITH REGIONAL HEPARINIZATION THIS COMPLICATED WAS NOT ENCOUNTERED. HYPERTENSION DEVELOPED ONLY IN 4 PATIENTS ON THE 6TH TO 8TH HOUR OF THE PROCEDURE, THIS REQUIRED A REDUCTION OF THE TIME OF HEMODIALYSIS. THE CAUSES OF COMPLICATIONS MAY BE DUE TO THE REACTION OF THE PATIENTS AND TECHNICAL FAULTS DURING THE INSTITUTION OF HEMODIALYSIS.
FACILITY: N-1 INSTITUT KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII
MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSKVA.

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--PROPERTIES OF HIGH ALUMINA CERAMIC MATERIALS -U-
AUTHOR--(U)IVANOV, V.P., YARMOLINSKAYA, L.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. NEFT. MASHINSTR. 1970, (1) 20
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ALUMINUM OXIDE CERAMIC, MAGNESIUM OXIDE, CHROMIUM OXIDE,
SILICON DIOXIDE, MECHANICAL STRENGTH, THERMAL CONDUCTIVITY, COMPRESSIVE
STRENGTH/(U)22KHS HIGH ALUMINA CERAMIC, (U)A995 HIGH ALUMINA CERAMIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1507 STEP NO--UR/0314/70/000/001/0020/0020
CIRC ACCESSION NO--AP0112501
UNCLASSIFIED