USSR

SERGIYENKO, LYUDMILA, Leninskoye Znamya, 14 May 72, p 4

"Transportation calls for a great deal of effort! Sometimes a vessel travels for 2 or 3 days. The sun is scorching mercilessly. We stretch awnings over the deck, protect the backs of dolphins with moist gauze covers, and take their cardiograms. If there is a storm, things are altogether bad, because the dolphins get seasick..."

"You have been working with dolphins for 6 years.   Have you had any favorites?"

"Slavka! A white-sided dolphin. We caught him 5 years ago. Somehow we liked him immediately.

"Slavka had a slate black back and a sly twinkle in his eyes. When we arrived at the place, one of our associates took Slavka in his arms (at that time Slavka weighed 80 kg). However, the dolphin played with his tail and our young colleague with the dolphin in his arms flew overboard.

"Later on, when working with Slavka, we became convinced that Slavka was unique. He was the first to begin grasping geometry, and very successfully at that. At the sound signal 'ready, on your mark' he took up a position.

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USSR

SERGIYENKO, LYUDMILA, Leninskoye Znamya, 14 May 72, p 4

From a distance of 20 m he determined the contour of a figure and chose the
required object correctly. Slavka learned to spend the winter in cold water
and to willingly swallow vitamins hidden in fish. Slavka refuted all the
assumptions by scientists that white-sided dolphins train poorly. Inci-
dentally, Slavka has lived in captivity for a long time, i.e., 5 years, and
this is a record."

TITLE--ACUTE HYPOXIA TOLERANCE AFTER VARIOUS EXPOSURE TIMES IN MEDIUM WITH
    A HIGH CARBON DIOXIDE CONTENT -U-

AUTHOR-(02)-AGADZHANYAN, N.A., SERGIYENKO, R.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VO. 191, MAR. 11, 1970, P. 487-489

DATE PUBLISHED--11MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPOXIA, WHITE RAT, CARBON DIOXIDE, ALTITUDE ADAPTATION,
    ALTITUDE CHAMBER, HYPERCAPNIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1092   STEP NO--UR/0020/70/191/000/0487/0489

CIRC ACCESSION NO--AT0115111
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0115111
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE
   BEHAVIOR OF THE HIGH ALTITUDE TOLERANCE OF WHITE RATS AS A FUNCTION OF
   THE EXPOSURE TIME TO A HYPERCAPNIC MEDIUM. THE ANIMALS WERE KEPT FOR 7
   DAYS IN A CHAMBER CONTAINING 6 PER CENT CARBON DIOXIDE (NORMAL OXIGEN
   CONTENT) AT ATMOSPHERIC PRESSURE, A TEMPERATURE OF 25 DEG C, AND A
   RELATIVE HUMIDITY OF 89 PER CENT. ACUTE HYPOXIA TOLERANCE WAS STUDIED
   IN AN ALTITUDE CHAMBER (12,000 M AT AN ASCENT VELOCITY OF 25 M-SEC).
   THE RESULTS INDICATE THAT TOLERANCE TO ACUTE HYPOXIA INCREASES AFTER
   EXPOSURE TO A HYPERCAPNIC MEDIUM FOR A PERIOD OF ONE DAY, BUT DECREASED
   APPRECIABLY AFTER AN EXPOSURE TIME OF 7 DAYS.   FACILITY:
   INSTITUT MEDIKO-BIOLOGICHESKIKH PROBLEM, MOSCOW, USSR.

UNCLASSIFIED

TITLE--GEOTHERMAL ZONALITY OF THE COMPOSITION OF EASTERN CISCAUCASUS
   PETROLEUMS -U-
AUTHOR-(02)-MAKARENKO, F.A., SERGIYENKO, S.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 193(1), 188--91

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--STATISTICAL ANALYSIS, PETROLEUM DEPOSIT, TEMPERATURE
   MEASUREMENT, GEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD7C/605060/F03 STEP NO--UR/0020/70/193/001/0188/0191

CIRC ACCESSION NO--AT0144412
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0144412
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATISTICAL ANALS. OF THE REGIONAL
  TEMP. VARIATIONS IN PETROLEUM OF MESOZOIC PLIOCENE FORMATIONS IN EASTERN
  CISCAUCASUS ARE STUDIED. BASED ON HISTOGRAMS, A GOOD CORRELATION IS
  FOUND BETWEEN SP. GR., STD. DEVIATION, AND TEMP. OF PETROLEUMS.   HIGH
  TEMP. HYDROCARBONS EXIST IN THE MESOZOIC FORMATIONS OF THE CARPATHIANS,
  AS DO ALSO DISTINCT GEOTHERMAL ZONES.

UNCLASSIFIED

1/2   011   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--PETROLEUM HYDROCARBONS FORMING COMPLEXES WITH UREA -U-

AUTHOR-(03)-SERGIYENKO, S.R., AIDOGDYEV, A., GARBALINSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ-TEKH., KHIM. GEOL. NAUK 1970,
    (3), 46-53
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--UREA, PETROLEUM PRODUCT, HYDROCARBON, ORGANIC COMPLEX
    COMPOUND, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1729   STEP NO--UR/0202/70/000/003/0046/0053

CIRC ACCESSION NO--AP0138702
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0138702
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARAFFIN CYCLOPARAFFIN CONTENTS IN
  DEAROMATIZED PETROLEUMS FROM THE EASTERN SHORE OF THE CASPIAN SEA
  (RESP., ZHETYBAI AND UZEN FROM THE MANGYSHLAK PENINSULA. KOTURTEPE AND
  BARSAGEL'MES FROM WESTERN TURKMEN, AND SHURTEPE AND KARAKTAI FROM
  BUKHARA) WERE SHOWN ON MICROFICHE.   FACILITY: INST. KHIM.,
  ASHKHABAD, USSR.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--THERMAL DIFFUSION SEPARATION OF A MIXTURE OF HIGH MOLECULAR WEIGHT
   ISOPARAFIIN AND HYBRID PARAFFIN CYCLOPENTANE HYCARBONS -U-
AUTHOR-(05)-SERGIYENKO, S.R., ERNEPESOV, D.N., ERNEPESOV, KH.N., KOROTKIY,
   A.G., MELIKADZE, L.D.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1159-61

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SEPARATION, PARAFFIN WAX, CYCLOPENTANE, THERMAL
   DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1125   STEP NO--UR/0020/70/190/005/1159/1161

CIRC ACCESSION NO--AT0119979
                       UNCLASSIFIED

CIRC ACCESSION NO--AT0119979   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FRACTIONATING EFFECTIVITY OF A H SUB2 O COOLED, THERMAL DIFFUSION APP. HAVING HOT AND COLD WALL TEMPS. OF 125 AND 27DEGREES, RESP., AND CONSISTING OF 2 COAXIAL 1000 MM COLUMNS, THE OUTER 50 MM IN INTERNAL DIAM., SEPD. FROM THE INNER BY A 0.4 MM GAP CONTG. SPIRALLED WIRE, AND EQUIPPED FOR SAMPLE REMOVAL WITH NEEDLE VALVES AT 200 MM INTERVALS, WAS 99.1, 100.2, AND 105.4PERCENT AFTER 8, 10, AND 12 HR DIFFUSION FOR A MIXT. OF EQUAL VOLS. OF CETANE AND DECALIN (I), SINCE CIS-I AND TRANS-I BEGAN TO SEP. AFTER 10 HR. FRACTIONATION FOR 12 HR OF A B. 350-450DEGREES CHELEKNE SEA PETROLEUM FRACTION HAVING RATIO (A-C) OF ISOPARAFFIN PARAFFIN CYCLOPENTANE HYDROCARBONS 65:35, AV. MOL. WT. (BAR M) 280, AV. NO. (K SUBO) OF RINGS-MOL. 1.2, D PRIME20 0.8303, AND N PRIME20 SUBD 1.4585 YIELDED A FIRST FRACTION HAVING A-C 90.5:9.5, M 261, K SUBO 0.3, D PRIME20 0.7939, AND N PRIME20 SUBD 1.4438, A FOURTH FRACTION HAVING A-C 82:18, BAR M 286, K SUBO 0.7, D PRIME20 0.8102, AND N PRIME20 SUBD 1.4504, AND A TENTH FRACTION HAVING A-C 21.5:78.5, M 296, K SUBO 3.6, D PRIME20 0.9139, AND N PRIME10 SUBD 1.4840. IN THE ORIGINAL MIXT. AND THE RESP. FRACTIONS, THE NO. OF ME GROUPS-MOL. WAS 4.4, 34. 4.7, AND 4.8 AND THE NO. OF CH SUB2 GROUPS-MOL. WAS 6.9, 13.6, 10.2, AND 1.2. COMBINED FRACTIONS 2, 3, AND 4 WERE REFRACTIONATED TO PREP. NEARLY PURE ISOPARAFFINS.   FACILITY: INST. KHIM., ASHKHABAD, USSR.

UNCLASSIFIED

MIKHAYLOV, V. V., YERDAKOV, S. V., ABROSIMOV, V. V., SERGIYENKO, V. B.,
Physiology Department, State Central Institute of Physical Culture, and
Biomechanics Sector, All-Union Scientific Research Institute of Physical
Culture, Moscow

"Energy Value of Muscular Work Under Fatigue Conditions"

Abstract: Hypotheses regarding the mechanism of increase in the energy value
of work are based on the fact that additional muscles are summoned in fatigue
situations, changes in the physical properties of the muscles, and discoordina-
tion of functions. Considering the possibility of fatigue by glycolysis
of respiration during muscular work and the reduction in oxygen consumption
in the case of acute fatigue, a role of activation of glycolysis with low
energy effect and simultaneous suppression of the highly efficient oxydative
phosphorylation in the mechanism of increased expenditures during fatigue is
proposed. A study was made to check the hypotheses.
     Experienced bicylists doing a variable amount of work of submaximal
capacity on a bicycle ergometer were tested to determine the oxygen need
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USSR

of work periods which were standard with respect to capacity and duration and also the vegetative and biometric indexes. During the fatigue period, the oxygen demand was 104-176% higher than otherwise. The phenomena of using additional muscles in the presence of fatigue not functioning previously and also discoordination of the functions were not detected in the study. An increase in work value in the case of fatigue was caused by recruiting additional motor units of the primary working muscles and also activation of glycolysis with low energy efficiency.

USSR

UDC 612.741

MIKHAYLOV, V. V., MARTYNOV, G. M., ABROSIMOV, V. V., and SERGIYENKO, V. B., Department of Physiology, State Central Institute of Physical Culture, and Biomechanics Sector, All-Union Scientific Research Institute of Physical Culture, Moscow

"Effect of Switching Levels of Functioning of Muscles During Rhythmic Work"

Abstract: The value of changing levels of muscular activity was studied in 18 athletes during 10 minutes of work on an ergometer bicycle involving two different methods of pedaling (downward and circular) differing in amount of effort involved, rhythmic structure, and distribution of exertions. Analysis of the oxygen demand and tracings of electromyograms of 12 muscles revealed the downward technique to be more efficient than the circular in terms of the energy expended. However, alternating the two methods proved to be more efficient than when either was used alone. Switching levels of functioning of muscles improves the blood flow and thereby prevents the formation of foci of local fatigue.

1/1

STUDIES ON INITIAL PERIODS OF MUSCULAR ACTIVITY IN TRAINED SUBJECTS

Mikhaylov, V. V.; Abrosimov, V. V.; Voznyak, S. V.;
Semashko, S. S.; Sergiyenko, V. B.

Dept. of Physiology, State Central Institute of Physical Culture, and the Lab.
of Biomechanics, the National Res. Institute of Physical Culture, Moscow

Increased energy cost of initial stage and during submaximal work performed by
sportsmen on a bicycle ergometer right after less intensive work, is discovered as compa-
red with energy expenditures under a steady state condition.

Values of the electric activity of 12 muscles of legs, arms and body, of the efforts
applied to turn the pedals and shown by dynamogram, and of oxygen demand during
various periods of work, are compared.

Increased energy expenditures during initial work periods are regarded from the view-
point of a possible role of anaerobic reactions prevailing over aerobic those, spreading
of excitation over the C. N. S. and energy expenditure overcoming inertia of the mecha-
nical system.

D.M.

2

Acc. Nr: ЛP0034764⁻

Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15, Nr 1, pp 43-48

IDENTIFICATION OF FOCAL LESIONS ON SCANNOGRAMS

Ignat'yev, U. V.; Serebryanyy, E. G.; Sergiyenko, V. B.; Filatov, V. I.

Summary

Experiments which helped to establish regularities making possible for the physicians to read scannograms and identify local lesions on them are described. Information cha-racteristics are presented and recommendations substantiated, facilitating the choice of optimal scanning conditions.

REEL/FRAME

19711474

UDC 537.311.33

VAVILOV, V. S., GUKASYAN, M. A., GUSEVA, M. I., KONOROVA, Ye. A., and SERGIYENKO, V. F.

"Electron-Hole Junction in a Diamond Obtained Through the Infiltration of Boron and Phosphorus Ions"

Abstract: The results are given of experiments performed to establish a p-n junction in diamonds by the ion impurity method. Boron was used as the acceptor impurity and phosphorus as the donor. The reasons for this choice were that, as one of the elements of the V group in the Mendeleyev table of elements and consequently as a "natural" donor, phosphorus has the greatest amount of interest; and that, on the basis of the graph of the annealing of layers infiltrated by phosphorus, it can be assumed that a greater number of active donor centers can be obtained with the same dosage of phosphorus doping than can be obtained with such interstitial atoms as lithium and carbon. Curves are plotted for the voltampere characteristic of the junction and for the photovoltage of the junction as a function of the excitation light wavelength. The authors conclude that they have proved the possibility of obtaining p-n

USSR

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▸1/2   042   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--ELECTRICAL CONDUCTIVITY OF N AND P TYPE SEMICONDUCTOR DIAMONDS
  PREPARED BY AN ION INJECTION METHOD DURING STEPPED ISOCHRONOUS ANNEALING
AUTHOR-(04)-VAVILOV, V.S., GUSEVA, M.I., KONOROVA, E.A., SERGIYENKO, V.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1) 10-16

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--DIAMOND, LITHIUM, COPPER, POTASSIUM, ALUMINUM, BORON,
  IONIZATION, ELECTRIC CONDUCTIVITY, SEMICONDUCTOR CRYSTAL, ANNEALING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1469   STEP NO--UR/0449/70/004/001/0010/0016

CIRC ACCESSION NO--AP0054325
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0054325
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ELEC. COND. OF SEMICONDUCTOR
  DIAMOND LAYERS OBTAINED BY INJECTION OF LI, C, P, AL, AND B IONS WAS
  STUDIED. INJECTION OF LI, C, AND P IONS LEADS TO THE FORMATION OF AN N
  TYPE LAYER, WHILE THE INJECTION OF AL AND B LEADS TO A RHO TYPE LAYER.
  THE ELEC. COND. ACTIVATION ENERGY IS 0.25-0.45 EV. DURING ISOCHRONOUS
  STEPPED ANNEALING, THE ELEC. COND. OF THE LAYERS DOPED WITH B FALLS, AND
  THEN INCREASES WITH INCREASING TEMP. TO A VALUE SEVERAL ORDERS OF
  MAGNITUDE HIGHER THAN THE ORIGINAL. ON PROLONGED ANNEALING AT
  1200DEGREES, THE COND. OF PREVIOUSLY ANNEALED LAYERS DOES NOT CHANGE.
  THREE VALUES OF THE ELEC. COND. ACTIVATION ENERGY WERE OBSD: 0.2 PLUS
  OR MINUS 0.02, 0.29 PLUS OR MINUS 0.02, 0.29 PLUS OR MINUS 0.02, AND 0.4
  PLUS OR MINUS 0.02 EV. THIS ATTRIBUTED TO THE PRESENCE OF RADIATION
  DEFECTS. IN SPECIMENS DOPED WITH LI, C, P, AND AL, THE COND. BEGINS TO
  DECREASE AT AN ANNEALING TEMP. OF 600DEGREES, WHILE AT HIGHER TEMPS. THE
  RESISTANCE OF THE LAYERS IS RESTORED ALMOST TO THAT OF THE UNDOPED
  CRYSTAL.

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--HALL EFFECT IN P TYPE SEMICONDUCTOR DIAMONDS DOPED WITH BORON BY
THE ION INJECTION METHOD -U-

AUTHOR-(04)-VAVILOV, V.S., GUSEVA, M.I., KONOROVA, E.A., SERGIENKO, V.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1) 17-22

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--HALL EFFECT, SEMICONDUCTOR MATERIAL, DIAMOND, BORON,
IONIZATION, IMPURITY SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1468

STEP NO--UR/0449/70/004/001/0017/0022

CIRC ACCESSION NO--AP0054324

UNCLASSIFIED

CIRC ACCESSION NO--AP0054324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HALL EFFECT AND CARRIER
MOBILITY IN SEMICONDUCTOR DIAMOND LAYERS DOPED WITH B BY ION INJECTION
WERE STUDIED THE MEASUREMENTS WERE CARRIED OUT AT 300-1200DEGREES K.
THE PLOT OF THE LOG R SUBS (THE MEASURED HALL CONST.) VS 1-T EXHIBITS A
MAX. IN THE SAME TEMP. REGION IN WHICH A DISCONTINUITY IS OBSD. IN THE
PLOT OF LOG SIGMA VS. 1-T (WHERE SIGMA IS THE ELEC. COND.), THIS BEING A
CONSEQUENCE OF THE FORMATION OF AN IMPURITY ZONE. AT THE DOPING LEVEL
USED, THE IONIZATION ENERGY OF THE B ACCEPTOR LEVEL WAS 0.19 EV. THE
OBSD. ACCEPTOR LEVELS OF THE RADIATION DEFECTS HAD IONIZATION ENERGIES
OF 0.29 AND 0.4 EV. AT 500-600DEGREES K, THE MOBILITY IS 30-50 CM PRIME
2-V_SEC, AND DECREASES WITH RISE IN TEMP. THE OBSD. RELATION BETWEEN
MOBILITY AND TEMP. CAN BE EXPLAINED BY THE INTERACTION BETWEEN THE
CARRIERS AND THE IONIZED IMPURITIES AND LATTICE VIBRATIONS, ASSUMING DUE
ALLOWANCE IS MADE FOR THE FACT THAT THE IMPURITY CONCN. IS NOT UNIFORM
OVER THE LAYER THICKNESS.

Analytical Chemistry

USSR

UDC 543.422.4+541.49+546.831/832

SERGIYENKO, V. I., DAVIDOVICH, R. L., LEVCHISHINA, T. F., SKLYADNEV, Yu. N.
(Chemistry Department, Far Eastern Branch, Siberian Department Acad. Sci.
USSR)

"Infrared Absorption Spectra of Zirconium and Hafnium Hexafluorocomplexes"

Abstract: In the present work are presented the results of the study on the
infrared-spectral absorption of hexafluorozirconates and hexafluorohehafnates
of the composition: M_2EF_6 (M^1 = Li, K, Rb, Cs), $M^{ii}EF_6 \cdot 6H_2O$ (M^{ii} + Ni, Co, Fe,
$MnEF_6 \cdot 5H_2O$ and $CuEF_6 \cdot 4H_2O$ in which M^1 represent a monovalent - and M^{ii}
divalent cations and $(EF_6)^{2-}$ represent the octahedral ions in the crystal
molecules (E + Zr, Hf). The spectra of all hexafluorocomplexes of zirconium
and hafnium with divalent cations showed strong absorption in the regions
400-800, 1600-1700, and 2900-3600 cm^{-1}. In the region 470-495 cm^{-1} there is a
strong absorption which agrees with the phase of the monovalent complexes.
From the analysis of the infrared spectra it becomes evident that the groups
$(ZrF_6)^{2-}$ and $(HfF_6)^{2-}$ are present in all specimens studied.

1/1

UNCLASSIFIED

TITLE--IR SPECTRA OF M SUB2 UO SUB2 F SUB4 .H SUB2 O COMPLEXES -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-SERGIENKO, V.I., DAVIDOVICH, R.L.

COUNTRY OF INFO--USSR

SOURCE--SPECTROSC. LETT. 1970, 3(2), 35-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, RUBIDIUM COMPOUND, CESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1679

STEP NO--US/0000/70/003/002/0035/0042

CIRC ACCESSION NO--AP0125300

UNCLASSIFIED

CIRC ACCESSION NO—AP0125300   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE IR SPECTRA (50-4000 CM PRIME NEGATIVE) WERE RECORDED OF M SUB2 UO SUB2 F SUB4 .XX PRIME O (M EQUALS RB, CS; X, X PRIME EQUALS H, D). THE ASYM. UO SUB2 PRIME2 POSITIVE STRETCHING FREQUENCIES (853 AND 847 CM PRIME NEGATIVE) FOR COMPDS. WITH M EQUALS RB AND CS RESP.) ARE CONSIDERABLY HIGHER THAN THOSE OF THE CORRESPONDING M SUB3 UO SUB2 F SUB5. VERY NARROW (HALF WIDTH 3-5 CM PRIME NEGATIVE) SYM. UO SUB2 PRIME2 POSITIVE STRETCHING VIBRATIONS WERE OBSD. AT 814 CM PRIME NEGATIVE.   THE U-O FORCE CONST. (6.40 MILLIDYNES-ANGSTROM) IN BOND ORDER (2.14) AND THE U-F BOND ORDER (0.430) ARE HIGHER IN RB SUB2 UO SUB2 F SUB4 .H SUB2 O THAN IN RB SUB3 UO SUB2 F SUB5. ANAL. OF THE OH AND OD VIBRATIONS INDICATE STRONG H BONDS (BOND ENERGIES 2.5-4.0 KCAL-MOLE), THE PRESENCE OF 2 KINDS OF H SUB2 O MOLS., AND STRONG COORDINATION OF H SUB2 O IN THE COORDINATION SPHERE OF UO SUB2 PRIME2 POSITIVE. IN M SUB2 UO SUB2 F SUB4 .H SUB2 O, THE COORDINATION POLYHEDRON IS A DISTORTED PENTAGONAL BIPYRAMID WHOSE EQUATORIAL PLANE CONSISTS OF 4 F ATOMS AND 1 H SUB2 O MOL.

UNCLASSIFIED

1/2   029
UNCLASSIFIED
TITLE--IR ABSORPTION SPECTRA OF THE M SUB3 UO SUB2 F SUB5 COMPLEXES -U-
PROCESSING DATE--09OCT70

AUTHOR-(02)-SERGIENKO, V.I., DAVIDOVICH, R.L.

COUNTRY OF INFO--USSR

SOURCE--SPECTROSC. LETT. 1970, 3(1), 27-34

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, AMMONIUM
COMPOUND, HYDROGEN BONDING, FLUORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1856

STEP NO--US/0000/70/003/001/0027/0034

CIRC ACCESSION NO--AP0112840

UNCLASSIFIED

CIRC ACCESSION NO--AP0112840   UNCLASSIFIED   PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF UO SUB2 PRIME2 POSITIVE IN M SUB3 (UO SUB2 F SUB5) (M EQUALS NA, K, RB, CS, OR NH SUB4 PRIME POSITIVE) AT 180-4000 CM PRIME NEGATIVE1 ARE DESCRIBED AND THE CHARACTERISTIC BANDS ARE ASSIGNED. THE ASYM. STRETCHING FREQUENCY OF UO SUB2 PRIME2 POSITIVE EXHIBITED A REGULAR DEPENDENCE ON THE M IONIC RADIUS, EXCEPT WHEN M EQUALS NH SUB4 PRIME POSITIVE, APPARENTLY OWING TO THE FORMATION OF H BONDS BETWEEN NH SUB4 PRIME POSITIVE AND F IN THE COMPLEX.   FACILITY: F. E. DEP., SIB. BR., VLADIVOSTOK, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE---30OCT70

TITLE--HEPATORENAL INSUFFICIENCY IN MECHANICAL JAUNDICE CAUSED BY CHOLEDOCHOLITHIASIS -U-

AUTHOR--SERGIYENKO, V.S.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 58-63

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER, KIDNEY, JAUNDICE, GALLBLADDER, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0105

STEP NO--UR/0497/70/048/006/0058/0063

CIRC ACCESSION NO--AP0129363

UNCLASSIFIED

CIRC ACCESSICN NO--AP0129363   UNCLASSIFIED

PROCESSING DATE--30OCT7C

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OUT OF 145 PATIENTS OBSERVED IN A
SURGICAL HOSPTIAL BETWEEN 1965-1967 FOR MECHANICAL JAUNDICE ASSOCIATED
WITH CHOLEDOCHOLITHIASIS 75 WERE OPERATED UPON: IN THE POSTOPERATIVE
PERIOD IN 47 CASES THERE WAS HEPATORENAL INSUFFICIENCY OF MODERATE AND
SEVERE FORM, IN 23, MECHANICAL JAUNDICE WAS COMPLICATED BY AN INFECTION.
OUT OF THIS GROUP OF PATIENTS 19 DIED AS THE RESULT OF THE HEPATOREANL
SYNDROME. ALONG WITH HEPATORENAL INSUFFICIENCY IN 11 PATIENTS THE
AUTHOR OBSERVED A MARKED HEMORRHAGIC SYNDROME, WHICH WAS MANIFESTED BY
PROFUSE GASTROINTESTINAL AND NASAL HEMORRHAGES. THE HEPATORENAL
SYNDROME WAS VERY MARKED IN PATIENTS WITH MECHANICAL JAUNDICE, WHICH WAS
COMPLICATED BY AN INFECTION (CHOLANGITIS, CHOLANGIOLITIS, MICROABSCESSES
OF THE LIVER, ETC.). THE AUTHOR NOTED 13 SUCH CASES WHEN ACUTE
OBSTRUCTION OF THE COMMON BILE DUCT AGAINST THE BACKGROUND OF TORPTID
CHOLANGITIS WAS COMPLICATED BY HEPATORENAL INSUFFICIENCY, WHICH WAS THE
CAUSE OF DEATH. IN SUCH INSTANCES DUE TO THE SEVERITY OF THE STATE OF
PATIENTS SURGERY IS CONTRAINDICATED, CONSERVATICE THERAPY IS ADVISABLE.
FACILITY: PERVAYA KHIRURGICHESKAYA KLINIKA TSENTRAL'NOGO
INSTITUTA USOVERSHENSTVOVANIYA VRACHEY I KLINICHESKAYA BOL'NITSA IM.
BOTKINA, MOSKVA.

UNCLASSIFIED

USSR

HOROBETS', M. M., SERHIYENKO, Yu. I.

SERGIYENKO

"Certain Properties of Self-Phasing Antenna Arrays"

Translation: Radiation patterns are calculated for a lattice comprised of weakly directional radiators connected in pairs by feeder lines of identical length in such a way that there is a difference of $\lambda/2$ in the length of the lines connecting adjacent pairs. It is shown that such lattice arrays scatter electromagnetic energy in directions which differ from the direction of arrival for any angles of incidence of the wave on the array. This property can be utilized for constructing echoless chambers, and also for reducing the effective reflecting surface of various devices. Three illustrations, bibliography of one title. N. S.

1/1

- 4 -

Antennas

USSR

GOROBETS, N. N., SERGIENKO, YU. I.

UDC 621.317.7.029.64

"Centimeter Range Polarimeter with Pointer"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 135- 138 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A306)

Translation: A polarimeter is described which operates by the method of two circular-polarized antennas. This polarimeter permits measurement of the ellipticity factor, the angle of orientation of the polarization ellipse and the direction of rotation of the field vectors. The ellipticity factor is measured by means of a logometer. An electronic commutator is used to improve the measurement accuracy. The commutator permits one detector and amplifying channel to be used for both circular-polarized components of the field. There are 3 illustrations and a 3-entry bibliography.

1/1

USSR

SERGIYEV, P. G., LYSENKO, A. Ya., NEMIROVSKAYA, A. I., and SEMASHKO, I. N.

UDC 911.3:616.936

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich. med., 1970 (Proceedings of the Scientific Conference Devoted to the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine 1970 — collection of works), Moscow, 1970, pp 12-14 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.81)

Translation: The contemporary area of Plasmodium vivax was reduced to almost half its size in connection with advances made in the eradication of malaria. P. vivax in multiple foci of malaria disappears later than P. falciparum. Strains with a prolonged incubation (primarily a long latent period) were found to be more adaptable to sanitary measures than were strains with a short incubation period and a secondarily long latent period. In practically malaria-free territories, when malaria outbreaks occurred because of previous cessation of sanitary measures, these outbreaks started with 3-day malaria.

1/1

USSR

UDC 616.936.2-085.926-039.71

TIBURSKAYA, N. A., SERGIYEV, P. G., MORKOVKIN, V. M., Institute of Medical
Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of
Health USSR, and First City Psychiatric Clinical Hospital imeni P. P. Kashchenko

"Radical Chemoprophylaxis of Three-Day Malaria of Two Incubation Types with
the Shorter Incubation Type Predominating"

Abstract: Research was conducted at the First City Psychiatric Clinical
Hospital imeni P. P. Kashchenko on patients requiring malaria therapy. Forty-
seven patients were infected with strain P. vivax via mosquito bite producing
malaria of two incubation types, with predominance of the shorter incubation
types. Of the 25 patients in the experimental group, 14 received biomycin;
and 11 received chloridine, with 5 also receiving quinocide 5 months after
infection. Results showed that patients receiving biomycin in doses of 2 g
daily over seven incubation days and patients receiving chloridine in doses of
0.05 g daily over the first 3 incubation days showed no primary disease mani-
festations. Subsequent relapses were not eliminated, however. Daily 0.05 g
doses of chloridine over 3 incubation days and with quinocide in 0.03 g daily
1/2

USSR

TIBURSKAYA, N. A., et al., Meditsinskaya Parazitologiya i Parazit inyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 431-433

doses over a 10 day period within 5 months of infection eliminated initial and relapse symptoms of the disease.

2/2

SERGIYEV, P. G., BEYSLEKHEM, R. I., MOSHKOVSKIY, Sh. D., DEMINA, N. A.,
KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS,
I. I., SHCHERBAKOV, V. A., YARMUKHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N.,
and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine
imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Abstract: Preventive mass vaccinations with a virulent strain of Leishmania
tropica major were found to give reliable protection against cutaneous leish-
maniasis. Only virulent strains can be used for vaccination. The degree of
inoculation with such strains is almost 100%, the inoculative process having,
as a rule, a favorable effect. The maximum size of the vaccination lesion does
not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically
all cases, the process does not last more than 5-6 months. Morbidity occurred
in the group vaccinated with the low-virulence strain, among those without
lesions, and among those whose lesions were less than 0.5 cm in diameter.

1/2

USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,
Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed;
allergic exanthem was noted occassionally. In order to prevent local and
general allergic reactions after vaccination, it is necessary to exclude per-
sons who have had cutaneous leishmaniasis. If past disease cannot be revealed
by means of anamnesis or medical examination, the intracutaneous leishmanin test
is recommended. The level of the virulence in inoculative strains should be
periodically tested, since insignificant initial virulence or its weakening
during culturing make a given strain unfit for preparation of inoculum.

2/2

1 ○

USSR

UDC 616.993.162-022.39-084.47-036.8

SERGIYEV, P. G., BEYSLEKHEM, R. I., MOSHKOVSKIY, Sh. D., DEMINA, N. A., KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS, I. I., SHCHERBAKOV, V. A., YARMUKHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N., and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Abstract: Preventive mass vaccinations with a virulent strain of Leishmania tropica major were found to give reliable protection against cutaneous leishmaniasis. Only virulent strains can be used for vaccination. The degree of inoculation with such strains is almost 100%, the inoculative process having, as a rule, a favorable effect. The maximum size of the vaccination lesion does not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically all cases, the process does not last more than 5-6 months. Morbidity occurred in the group vaccinated with the low-virulence strain, among those without lesions, and among those whose lesions were less than 0.5 cm in diameter.

1/2

- 24 -

USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,
Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed;
allergic exanthem was noted occassionally. In order to prevent local and
general allergic reactions after vaccination, it is necessary to exclude per-
sons who have had cutaneous leishmaniasis. If past disease cannot be revealed
by means of anamnesis or medical examination, the intracutaneous leishmanin test
is recommended. The level of the virulence in inoculative strains should be
periodically tested, since insignificant initial virulence or its weakening
during culturing make a given strain unfit for preparation of inoculum.

2/2

USSR

TOLOMASOV, V.A., ABROSIMOVA, L.N., SERGIYEVSKAYA, T.N.

UDC 621.382.2

"Study Of Four-Layer Epitaxial High-Voltage Silicon Of p^+-n-p-n^+ Structure (Short Communication)"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 66-67 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B224)

Translation: Epitaxial structure of the p^+-n-p-n^+ type were prepared by sublimation of Si in a vacuum. Disks of Si doped with phosphorous were used as substrates, performing the role of a n-type base. The p-type bases were prepared from a source of Si doped with boron, and the p^+-n^+ emitters from Si doped with boron and phosphorous respectively. The current-voltage characteristics of the structure has a section with negative resistance. The reverse voltage of the structure is 2000--2400 V, and the switching voltage is 1200--1500 V. The large residual voltage (2--5 V) is explained by the high resistance of the applicable contacts and n-base. 2 ref. 1 tab. N.K.

1/1

SERGIYEVSKAYA, T.N.

SPRS 5934
6.73

X-13.   CONCENTRATION PROFILES IN AUTOEPITAXIAL LAYERS OF SILICON

[Article by V. A. Tolmasov, T. N. Sergiyevskaya, I. N. Abrosimova, T. A. Zev-
eke, Gor'kiy Novosibirsk; III Simposium Po Protsessam Rosta i Sinteza Polu-
provodnikovykh Kristallov i Plenok; Russian, 12-17 June 1972, p 146]

1. The volt-capacity method and the method of interstitial etching
were used to study the concentration distribution of interstitial atoms
autoepitaxial layers of silicon of p and n-type conductivity grown by pyroly-
sis of hydrides and by sublimation in a vacuum on substrates alloyed with B,
P and Sb to a concentration of ~ 10¹⁹ cm⁻³.

2. The width of the concentration p-p⁺ and n-n⁺ junctions obtained at
does not exceed 0.2 microns in a vacuum and 1100°C by pyrolysis of hydrides
from the substrate.

3. On the concentration curves from autoepitaxial layers of silicon
micron long are observed which are unexplainable by phosphorus diffusion from
room at 1000-1100°C on substrate alloyed with phosphorus, tails up to one
the substrate.

4. The nature of the observed profiles can be explained by the pecul-
iarities of the hybrid and vacuum technology of obtaining autoepitaxial sili-
con layers.

- 146 -

Abstract: An asymptotic solution is obtained to the system of boundary layer equations with intense injection of foreign ray-absorbing substance for optically thick and thin boundary layers with account for the magnetic field effect. Analytical formulae are obtained which allow calculation of temperature profiles and concentration. The results of temperature calculation agree well with those obtained earlier by the numerical method. A heat flux to the wall for an optically thick boundary layer asymptotically tends to zero with increasing injection parameter and Prandtl number.

1/1

Abstracting Service:
INTERNAT. AEROSPACE ABST. 5-70   Ref. Code: UR 0170

A70-23868 #   Approximate solution of the equations of the boundary layer with injection (Priblizhennoe reshenie uravnenii pogranichnogo sloia pri vduve). A. M. Golovin and E. D. Sergievskii (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Inzhenerno-Fizicheskii Zhurnal, vol. 18, Jan. 1970, p. 110-117. 11 refs. In Russian.

Considered is the system of equations for a laminar boundary layer with blowing through the surface of a wedge with top angles of pi and one-half pi. Analytic solution of the linearized motion equation yields results which are in a fine agreement with the numerical methods. Simple analytic expressions are presented for calculation of the concentration and temperature fields at large and small Prandtl and Schmidt numbers.

(Author)

REEL/FRAME
19810439

≈ USSR

SERGIYEVSKIY G. M., TER-SAAKOV, A. P.

"Method for Accelerating a Multidimensional Stochastic Approximation"

Translation: Let $y(X)$ be a random function of the argument $X = \|x_1, \ldots, x_m\|^T$ with the distribution $F(y/X)$; $M(X) = M\{y(X)\} = \int y \, dF(y/X)$ is a regression function with a single maximum at the point $X = \theta$. The stochastic approximation process converging to θ under certain conditions is determined by the relation-ship

$$X_{n+1} = X_n + a_n \frac{Z_n}{c_n}.$$

where

$$a_n > 0; \quad c_n > 0; \quad \lim_{n \to \infty} c_n = 0; \quad \sum_{n=1}^{\infty} a_n = \infty;$$

$$\sum_{n=1}^{\infty} a_n c_n < \infty; \quad \sum_{n=1}^{\infty} \left(\frac{a_n}{c_n}\right)^2 < \infty.$$

It is proposed that the vector of the increments Z_n/c_n be used with components

1/3

USSR

SERGIYEVSKIY, G. M., TER-SAAKOV, A. P., V sb. Nekotor. vopr. kibernet., No 1, Moscow, 1970, pp 92-100

$$b_i = \frac{1}{Nc_n^2} \sum_{k=1}^{N} \Delta x_i^k [n]\, y^k [n].$$

determined from measurements of $y^k[n]$, $k = 1, 2, \ldots, N$, of the function $y(X)$ made at points different from X_n by the variations $\Delta x_i^k[n]$ of the variables x_i, $i = 1, 2, \ldots, m$, $k = 1, 2, \ldots, N$ which satisfy the relationships $|\Delta x_i^k[n]| = c_n$

for any k and i,
$$\sum_{k=1}^{N} \Delta x_i^k [n] = 0, \quad i = 1, 2, \ldots, m.$$

$$\sum_{k=1}^{N} \Delta x_i^k [n]\, \Delta x_j^k [n] = 0, \quad i \neq j.$$

and which thus determine a completely saturated orthogonal plan of the factor experiment with the number of measurements $m + 1 \leq N \leq m + 4$. The values of b_i give a more precise evaluation of the components of the gradient than the initial differences $[y(X_n + c_n e_i) - y(X_n)]/c_n$ or the central differences

2/3

USSR

SERGIYEVSKIY, G. M., TER-SAAKOV, A. P., V sb. Nekotor. vopr. kibernet., No 1, Moscow, 1970, pp 92-100

$$[y\,(X_n + c_n e_i) - y\,(X_n - c_n e_i)] \cdot (2c_n).$$

$i = 1,2,\ldots,m$, if $y(X)$ has continuous first and second derivatives for almost all sample trajectories and the dispersion of the derivative $\partial y(X)/\partial x_i$ of the deviations $y(X) = y(X) - M(X)$ is sufficiently small as compared with the dispersion of $y(X)$. (Here e_i is a unit vector corresponding to the component x_i, $i = 1,2,\ldots,m$). The stochastic approximation process is correspondingly accelerated. If the function $y(X)$ is obtained as a result of statistical modeling on a computer, developing the relation between experiments of the n-th step through the use of the same random numbers raises the accuracy of the evaluation. Yu. Pollyak.

3/3

UNCLASSIFIED   PROCESSING DATE--09OCT70

TITLE--INCREASING THE RELIABILITY OF DIGITAL PROGRAM CONTROL OF A MACHINE
TOOL -U-

AUTHOR-(02)-SERGIYEVSKIY, L.V., SELIVANOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 7-8

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ELECTRIC EQUIPMENT, HYDRAULLIC EQUIPMENT, AUTOMATIC CONTROL
SYSTEM, MACHINE TOOL COMPONENT, DIGITAL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1769   STEP NO--UR/0121/70/000/003/0007/0008

CIRC ACCESSION NO--AP0114268

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0114268
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THE AVAILABLE
   STATISTICAL MATERIAL, THE MAJORITY OF FAILURES OF MACHINE TOOLS WITH
   DIGITAL PROGRAM CONTROL IS DUE TO CAUSES ORIGINATING IN THE ELECTRONIC
   DEVICES AND IN THE ELECTRICAL EQUIPMENT, AS WELL AS IN THE TAPE
   DRAWING MECHANISM AND THE HYDRAULIC DRIVE OF THE MACHINE TOOL. REPAIRS
   ON THE HYDRAULIC FACILITIES, THE MECHANICAL SUBASSEMBLIES, AND THE
   ELECTRICAL EQUIPMENT ARE THE MOST LABOR INTENSIVE OPERATIONS. A REPORT
   IS GIVEN CONCERNING THE MEASRUES TAKEN TO INCREASE THE RELIABILITY OF
   THE DIGITAL PROGRMA CONTROL SYSTEM AND TO DECREASE THE TIME REQUIRED FOR
   ELIMINATING DEFECTS IN IT.

UNCLASSIFIED

USSR   UDC 612.285+612.223

SERGIYEVSKIY, M. V., Kuybyshev Medical Institute imeni D. I. Ul'yanov

"Regulation of Respiration Under Normal Conditions and in Altered Gaseous Media"

Abstract: Under normal conditions respiratory function is automatically regulated by a variety of reflexes at different levels of the nervous system. In hypoxia, the products of incomplete oxidation act directly on the cerebral cortex and then on the medulla oblongata. Of particular importance at this time are the receptor zones in brain tissues, including the venous sinuses and the bulb of the internal jugular vein. They are the first of the receptors to perceive the effect of the products of incomplete oxidation formed in the cortex and they are largely responsible for supplying oxygen to the cortical cells. The first structure to be disrupted by hypoxia is not the respiratory center proper but cortical activity which controls the functional mobile constel- lations of nerve centers that integrate the adaptation of functional systems to different conditions.

1/1

USSR

UDC 629.78.018.1

ALEKSEYEV, Yu. N., KOLOSHNITSYN, V. A., MALYSHEV, G. P., NIKOLAYEVA, V. N. and SERGIYEVSKIY, N. A.

"An Experimental Study of the Effect of Surface Cooling on Laminar-Turbulent Transition in the Boundary Layer"

Abstract: The purpose of this study was to investigate the effect of surface cooling on flow regime in the boundary layer, given mainly subsonic flow rate around a body, at which time air compressibility can be ignored. The experiment was conducted with identical models in two different wind tunnels with different degrees of turbulence: for the first tunnel, $\varepsilon = 0.5\%$, for the second, 0.08%. The model was in the form of a hollow aluminum cylinder 100 mm in diameter, the nose cone being in the form of an ellipsoid of rotation with axis ratio $1/b = 9$. The surface of the model was polished; length of the working section was 2.0 m. Distribution of static pressure was marked by absence of a gradient over practically the entire length of the working section. The electrothermoanemometric method was used to determine flow regime in the boundary layer. Wall temperature was measured with use of calked 1/2

ЛEKSEYEV, Yu. N., et al., Teplo- i Massoperenos (Heat and Mass Transfer),
Vol 1, 1972, pp 171-175; (Referativnyy Zhurnal, Series 41, No 6, 1972,
Abstract No 6.41.181)

chromel-copel thermocouples. During the experiment the transition position
was determined twice: in the first instance, for $T_w = T_\infty$, while in the
second, the cavity of the model was filled with melting ice. Experimental
procedures and results are given in tabular form. It is concluded that 1)
surface cooling leads to stabilization of flow in the boundary layer of an
incompressible gas, and 2) with increase in thermal head the thermal
Reynolds number rises. Biblio. 4, illus. 3, tables 1.

2/2

USSR   UDC 616.12-007-053.1-089.5-06

SERGIYEVSKIY, V. S., TASHPULATOV, A. T., CHERNOV, V. K., NUGMANOV,
YE. K., YAVORSKAYA, G. V., ERENBURG, T. A., LIZUNKOVA, L. P., and
TSYBANEVA, N. G., Department of Cardiovascular Surgery, Kazakh
Institute of Clinical and Exeperimental Surgery, Ministry of Public
Health, Kazakh SSR, Alma-Ata

"Operative Complications During Correction of Congenital Heart De-
fects Under Conditions of Moderate Hypothermia"

Abstract: A total of 230 operations were performed using hypothermia
at the institute from 1965 to 1969, operations were conducted to
correct septal defects, pulmonary and aortic stenosis, tetralogy
of Fallot, combined and rare defects. Among the life-threatening
complications encountered in the operations were asystole, ventri-
cular fibrillation, aeroembolism of the coronary vessels, loss
of blood, atrioventricular and bundle-branch heart block. The causes
of the complications are analyzed and suggestions made to prevent
them and to control those that occur. With the present level of
knowledge, mortality during operations performed under moderate
hypothermis should not exceed 1%.
1/1   - END -
7676
CSO: 1840 (92 pages)   - 92 -

Acc. Nr: AP0047357

Ref. Code: UR 0589

POSTOPERATIVE ANESTHESIA IN CARDIAC SURGERY

V. S. Sergiyevskiy, and A. I. Bashmakov

In 198 patients after various cardiac operations the following types of postoperative anesthesia were employed: subcutaneous injection of nitrogen monoxide (65 patients), intracostal blockade with a mixture of local anesthetics (53 cases), continuous blockade of the thoracic sympathetic ganglia through an indwelling catheter (50 patients), and continuous peridural anesthesia (30 patients). The analysis has demonstrated that anesthesia used in the main group enabled to avoid utterly pulmonary complications, while in a control group these were noted in 12 cases. A favourable effect of the used narcosis on the external respiration function and gas metabolism was observed.

1/1

REEL/FRAME

19790883

2

USSR   UDC 542.61:546.212

FROLOV, Yu. G., SERGIYEVSKIY, V. V., and ZUYEV, A. P., Moscow Chemico-
Technological Institute imeni D. I. Mendeleyev

"A Study of the Hydration of Certain Neutral Organophosphorus Compounds"

Abstract: The role of water dissolved in the organic phase during the extrac-
tion is quite unexplained in a number of cases, though this does not negate
the idea that the hydration of reagents has a strong influence on extraction
equilibrium. In this connection, the dependence of water solubility, in
solutions of 10 different organophosphorus compounds in toluene, on water
activity, was studied. The solubility-activity relationship was determined
by the isopiestic method developed by the authors (Radiokhimiya, 13, 760, 1971).
Water concentration in the organic solutions was determined by electrometric
titration, using Fischer's reagent. All 10 cases showed that the analytical
concentration of water in the organic phase is linearly dependent on activity
in an aqueous solution. Magnitudes of the distribution constants and the
correlation factors calculated by the method of least squares, were determined.
It is concluded that the demonstrated relationship between solubility and
activity of water disproves the previously held belief in the formation of
1/2

USSR

stoichiometric compounds between water and reagent molecules; also, that
the logarithm of the distribution constants for water correlates linearly
with the sum of the Kabachnik substituents for the 10 compounds studied.

2/2

USSR

SERGOVANTSEV, V. T., GERASIMOV, S. P., and SHCHERBINA, V. Ye.

"Device for Reception and Transmission of Signals Along a Tubular Conducting Channel"

Translation: A device is patented for the reception and transmission of signals along a tubular conducting channel containing a filter whose input is connected to the tubular conductor; an amplifier; a controller of signal repetition periods; a recorder; an oscillator; AND, OR elements; an "inhibit"; storage devices; a cutoff circuit; controlling and modulating flip-flops; a modulator; and switches. For the purpose of simplifying and improving the reliability of operation of the device, the outputs of the switches are connected to the inputs of the OR element, the output of that element is tied to the input of the controlling flip-flop, and the output of the latter is connected to the input of the "inhibit" element and through the AND element to the recorder input and the first inputs of the cutoff circuit and controller of the signal repetition

1/2

USSR

SERGOVANTSEV, V.T., et al, USSR Author's Certificate No 278819

periods; the second inputs of the cutoff circuit and the controller are con-
nected to the recorder output, and the output of the controller is connected to
the second input of the controlling flip-flop; the outputs of the recorder
are then connected through the proper switch contacts to the input of the
modulating flip-flop.

2/2

USSR

UDC: 621.372.826

KAZNACHEYEV, Yu. I. and SERGOVANTSEV, V. T.

"Investigation of Gas Pipes as Waveguides for Transmission of Com-
munication and Remote Control Signals"

V sb. Dal'niy transport gaza (Remote Gas Transportation--collection
of works) Moscow, "Nedra," 1970, pp 261-265 (from RZh-Radiotekhnika
No. 3, March 71, Abstract No. 3B129)

Translation: An analysis is made of the propagation conditions
for electromagnetic waves along gas conducting pipes in order
to use the latter in waveguide communication. A preliminary
estimate is made of the cost for such a line. Two illustrations,
two tables. N. S.

1/1

- 153 -

USSR

UDC: 621.398.63:654.93

SERGOVANTSEV, V. T., GERASIMOV, S. P., SHCHERBINA, V. Ye.

"A Device for Sending and Receiving Signals Through a Conduit Channel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278819, Class 21, filed 28 Nov 68, pp 51-52

Abstract: This Author's Certificate introduces a device for sending and receiving signals through a conduit channel. The unit contains a filter whose input is connected to the conduit, an amplifier, a signal repetition frequency setter, a register, an oscillator, AND, OR and "inhibit" elements accumulators, a dump unit, control and modulating flip-flops, a modulator and keys. As a distinguishing feature of the patent, the device is simplified and operational reliability is improved by connecting the outputs of the keys to the inputs of the OR element, connecting the output of the OR element to the input of the control flip-flop, connecting the output of the control flip-flop to the input of the "inhibit" element, and through the AND element -- to the input of the register and to the first inputs of the dump unit and the signal repetition frequency setter. In addition, the second inputs of the dump unit and the signal repetition frequency setter are connected to the output of the register, the signal repetition frequency setter output is connected to the second input of the control flip-flop, and the register outputs are connected through the corresponding key contacts to the input of the modulating flip-flop.
1/1

Acc. Nr: AP0044019

Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 2, pp 22-25

SANITARY-BACTERIOLOGICAL EFFECT OF DECONTAMINATING SEWAGE SEDIMENTS IN AEROBIC STABILIZATION

L. A. Sergunina, N. Yu. Tugusheva, V. V. Chuprakova

The results of sanitary-bacteriological investigations into the method of aerobic stabilization of sewage sediments under laboratory and pilot field conditions are reported. With aerobic treatment the number of E. coli is shown to decrease by 80—99.9% and the saprophytic microflora content — by 50—80%, depending upon the type of the sediments to be processed. Physico-chemical conditions of the environment (pH and Eh) were determined to ascertain the cause accounting for destruction of microorganisms. The pH and Eh values were within limits allowing for vital activity of the microorganisms under study. Exhaustion of the substrate and environmental cumulation of metabolites were, apparently, the main causative factors responsible for the destruction of microorganisms.

1/1

REEL/FRAME
19770456

6

TITLE--NICKEL NITRATE PRODUCTION -U-

AUTHOR-(05)-PETRACHKOV, F.A., KARLOV, V.P., SHERSHNEV, N.G., SERGUNKIN,
V.N., CHERNYAVSKAYA, L.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,380
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 1970
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, NICKEL COMPOUND, NITRATE, CRYSTALLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1450   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126981
                         UNCLASSIFIED

CIRC ACCESSION NO--AA0126981
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NI NITRATE IS PREPO. WITHOUT THE
   FORMATION OF AN NH SUB4 NO SUB3 BYPRODUCT BY DISSOLVING METALLIC NI IN
   HNO SUB3 CONTG. 700-1000 G-L. NI(NO SUB3) SUB2. 6H SUB2 O IN THE
   PRESENCE OF 20-70 G-L. NH SUB4 NO SUB3 IN THE FORM OF A MOTHER LIQUOR
   OBTAINED AFTER EVAPN. AND CRYSTN. OF NI NITRATE.

UNCLASSIFIED

Extraction and Refining

USSR   UDC 542.61:541.49:546.831/.832

GOLUB, A. M., and SERGUN'KIN, V. M., All-Union Scientific Research Institute
Reaktivelektron, Donetsk, and Kiev State University imeni T. G. Shevchenko, Kiev,
Ministry of Higher and Secondary Specialized Education Ukrainian SSR

"Extraction of Thiocyanate Complexes of Zirconium and Hafnium with Cyclohexane
(CHN) and Tributyl Phosphate (TBP)"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, No 6, Jun 70, pp 1203-1209

Abstract: To obtain data pertaining to the separation of Zr from Hf by solvent
extraction and determine the composition of the complexes that were extracted,
the distribution of Zr and Hf between an organic phase consisting of CHN or TBP
diluted with benzene and an aqueous phase was studied in the presence of NCS ions,
$HClO_4$, and HCl. The extraction of $ZrCl_4$ and $HfCl_4$ from CHN and TBP with H_2O in
the presence of NCS ions in various concentrations was also studied. At a concen-
tration of $/NCS/_{aq} < 0.15$-0.2 g-mole/l in the aqueous phase, Zr and Hf were ex-
tracted into the organic phase in the form of $M(OH)_3$ NCS (M = Zr, Hf), while at
$/NCS/_{aq} > 0.2$ g-mole/l. Zr was extracted in the form of $Zr(OH)_2 (NCS)_2$ and Hf as
$Hf(OH)_3NCS$ and $Hf(OH)_2(NCS)_2$. At $/NCS/_{aq} > 1.5$ mole/l. Zr and Hf could be
transferred into the organic phase in the form of tetrathiocyanate complexes. The
1/2

USSR

GOLUB, A. M. and SERGUN'KIN, V. N. Zhurnal Prikladnoy Khimii, Vol 43, No 6, June 70, pp 1203-1209

highest extractability into CHN and TBP was shown by the $(NCS)_2$ complexes of Zr and Hf. The extracted thiocyanate complexes contained in the organic phase were solvated with 1-2 molecules of CHN or TBP. On grinding of dry NaCNS with dry $MOCl_2 \cdot 8H_2O$ and treatment of the mixture with the solvents used for extraction, the complexes $M(OH)_2(NCS)_2 \cdot 2Solv$ (Solv = CHN, TBP) formed.

2/2

USSR

SERGUSHOV, YU. D., SOKOL'NYY, L. A., Active Members of the Scientific and
Technical Society of Radio Engineering, Electronics and Communications imeni
A. S. Popov

"Utilization of a Quantizing Cathode Ray Tube for Conversion of Wide Band Sig-
nals to Digital Code"

Abstract: A study was made of the errors of an analog-to-digital wide-band
signal converter executed from a quantizing cathode ray tube. A cathode ray
tube having the following basic technical characteristics was considered:
number of quantization levels -- 15; collector current -- 1 milliamp; sensitiv-
ity with respect to deviation 6 volts per quantization level; output capaci-
tance of the collectors 3 picofarads. The functional schematic of the analog-
to-digital converter based on the quantizing cathode ray tube and the static
amplitude characteristic of 3 channels of the quantizing cathode ray tube
representing the dependence of the load voltage connected to each of the col-
lectors on the magnitude of the deflecting voltage are presented. Formulas
are derived for calculating the dispersion of the signal distortion, and the
results are plotted as a function of the parameters of the converter. The
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USSR

SERGUSHOV, YU. D., et al., Radiotekhnika, Vol 27, No 1, 1972, pp 92-95

quantizing cathode ray tube with the indicated parameters can be used for con-
version of wide band signals (with a band of about 2-3 megahertz) without
further complication of the system to eliminate coding ambiguity.

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UNCLASSIFIED   PROCESSING DATE--20NOV70

TITLE--TYPIFICATION OF HYDROGRAPHS OF LIQUID AND SEDIMENT RUNOFF FOR
ESTIMATION OF DEBIT STABILITY OF INFILTRATIONS WATER INTAKES -U-

AUTHOR-(04)-SERGUTIN, V.YE., PORYADIN, A.F., TURUTIN, B.F., CHERKASOV,
A.YE.

CCUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 5, PP 76-81

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RUNOFF, RIVER WATER, SEDIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0067

STEP NO--UR/0050/70/000/005/0076/0081

CIRC ACCESSION NO--AP0132380

UNCLASSIFIED

CIRC ACCESSION NO--AP0132380

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TYPIFICATION OF WATER REGIME OF
RIVERS IS PERFORMED ACCORDING TO THE PRINCIPLE OF MOTION SYNCHROHISM OF
LIQUID (Q) AND SEDIMENT (G) RUNOFF (DISCHARGES), I.E. ACCORDING TO
COINCIDENCE OF PEAKS OF WATER AND TURBIDITY DUE TO SUSPENDED LOAD DURING
THE SPRING AND SUMMER FLOODS. TYPIFICATION OF COMBINED HYDROGRAPHS Q
AND G DISCHARGES IS PERFORMED ON THE BASIS OF WELL KNOWN REGULARITIES OF
INTRA ANNUAL DISTRIBUTION OF THE RIVER RUNOFF. CERTAIN EXAMPLES ON THE
CONTROL OF INFILTRAITON WATER INTAKES OPERATION ARE GIVEN.
FACILITY: KRASNOYARSKIY INSTITUT TSVETNYKH METALLOV.

UNCLASSIFIED

ZAYTSEV, B. Ye., GOTIN, V. N., SHCHERBAKOV, A. I., SERGYEV, A. B., ZHITKOV, N. K., OKOROKOV, G. N., BOYARSHINOV, V. A., TULIN, N. A., VOYNOVSKIY, Ye. V., TOPILIN, V. V., POZDEYEV, N. P., SHALIMOV, Al. G., OSIPOVA, L. A., CHERNOV, Yu. V., and RAZANOV, T. S.

"Specifics of Vacuum Arc Remelting of Nickel-Based Alloys and Stainless Steels With Reverse Arc Polarity"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 181-183

Translation: Results are presented from a study of vacuum arc remelting of nickel alloys in a crystallizer 380-480 mm in diameter with thermocouples calked in length and height. The rate of melting with reverse polarity is 20% higher with identical bath depth of liquid metal. This is a result of more intensive heat transfer from the walls of the crystallizer during melting with reverse polarity. The macrostructure, chemical composition N, O, H and mechanical properties of the metal produced by melting with forward and reverse polarity are identical. The ingot produced with reverse polarity had no corona. 2 figures; 1 table; 1 biblio. ref.

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USSR

UDC 547.241

AZERBAYEV, I. N., DZHAYLAUOV, Yu. G., BOSYAKOV, K. B., YERZHANOV, K. B.,
SERIKBAYEV, K. S., and ALEKSEYEVA, N. N., Institute of Chemical Sciences,
Acad. Sc., KazSSR, Alma-Ata

"Reactions of Unsaturated Phosphites With Aldehydes and Ketones"

Abstract: Condensation of dipropargyl phosphite with chloral and bromal yields
0,0-dipropargyl (1-hydroxy-2,2,2-trichloroethyl)phosphonate and its tribromo
analog even without any catalyst. In the presence of sodium alkoxide the
reaction of diallyl phosphate with 2,5-dimethylpiperidone-4, 2,6-diphenyl-
piperidone-4, 2,6-di(2-hydroxyphenyl)-piperidone-4, 1,2,5-trimethylpiperidone-
-4 yields the respective 4-diallylphosphanepiperidoles-4; with 2,2-dimethyl-
tetrahydropyranone-4, 2,2-dimethyltetrahydrothiopyranone-4 and 2,5-dimethyl-
tetrahydrothiopyranone-4 the products are the respective 4-diallylphosphane-
tetrahydropyranols-4. The esters of α-hydroxyphosphinic acids of pyrone,
and thiopyrone series are unstable, decomposing on distillation.

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USSR

UDC 547.241+547.362+547.81+547.823

AZERBAYEV, I. N., DZHAYLAUOV, S. D., BOSYAKOV, Yu. G., YERZHANOV, K. B., and SERIKBAYEV, K. S., Institute of Chemical Sciences, Academy of Sciences KazakhSSR

"Reaction of Dipropargylphosphorous Acid With Heterocyclic Ketones"

Abstract: Reaction of dipropargylphosphorous acid with ɣ-ketones of the pyran, thiopyran, and piperidine series in presence of sodium alkoxide leads to the formation of respective dipropargyl esters of heterocyclic α-hydroxyphosphonic acids. It was shown that nucleophilic addition of dipropargyl phosphite to pyranone and thiopyranones, in contrast to piperidones, requires the presence of alkaline catalysts. It is assumed that the aminoketone acts as a catalyst.

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USSR

SERIKBAYEV, Sh. 3.

"Determining the Accumulated Perturbations in Parametrically Perturbed Systems"

Sb. nauchn. rabot aspirantov. Un-t druzhby narodov im. Patrice Lumumby, Fak. fiz.-matem. i yestestv. n. (Scientific Works of Aspirants, Patrice Lumumba University of International Amity--collection, Department of Physical Mathematics and Natural Science) 1970, No. 7, pp 176-182 (from Rzh-Matematika, No. 3, March 71, Abstract No. 3B197)

Translation: The problem of B. V. Bulgakov regarding the accumulation of perturbations in one coordinate in a fixed time interval T is solved. The worst parameter values and the worst variation in constantly active perturbations realizing a coordinate maximum at moment T are found by assuming constant signs in [0,T] of all elements in the fundamental matrix of the linear part of the system. V. Aleksandrov

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USSR

SERIKBAYEV, Sh. S.

UDC: 517.933

"Absolute Stability Conditions of Controlled Systems With One Non-linear Element"

Sb. nauchn. rabot aspirantov. Un-t druzhby narodov im. Patrisa Lumumby, Fak. fiz.-matem. i yestestv. n. (Scientific Works of Aspirants, Patrice Lumumba University of International Amity-- collection, Department of Physical Mathematics and Natural Sci- ence) 1970, No. 7, pp 182-188 (from Rzh-Matematika, No. 3, March 71, Abstract No. 3B198)

Translation: With the help of the solution of the problem of B. V. Bulgakov regarding the accumulation of perturbations, the necessary and sufficient conditions are found for the absolute stability of the nonlinear system

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USSR

SERIKBAYEV, Sh. S., Sb. nauchn. rabot aspirantov. Un-t druzhby narodov im. Patrisa Lumumby, Fak. fiz.-matem. i yestestv. n., 1970, No. 7, pp 182-188

$$x'_s = \sum_{j=1}^{n} p_{sj} x_j + \beta_s \varphi(\sigma, t), \quad s = 1, \ldots, n,$$

$$\sigma = \sum_{j=1}^{n} \gamma_j x_j, \text{ and } \beta_i \delta_i \geq 0, \ a \leq \varphi(\sigma, t)/\sigma \leq b,$$

and all outer diagonal elements of the matrix $C = (C_{sj})$, where $C_{sj} = p_{sj} + \frac{1}{2}(a + b)\beta_s \gamma_j$ are nonnegative.   V. Aleksandrov

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USSR

DAVYDOV, A. S., Academician of the Ukrainian Academy of Sciences, and SERIKOV, A. A.

UDC 535.373.2

"Energy Transmission Between Impurity Molecules With Relaxation"

Abstract: To investigate the role of the relaxation processes in which energy is transmitted irreversibly from donor to acceptor molecules, the authors develop the theory of this energy transmission. They begin by considering a system of a donor molecule and an acceptor molecule of different electronic excitation levels and a single-phonon vibron excitation of the same level as the donor molecule. The oscillatory part of the of the vibron excitation may transform with a particular frequency to the energy of solvent oscillations, in which the solvent is considered to be a thermostat, and the excitation energy of the donor molecule may radiate at a particular frequency or transform without radiation to the energy of oscillations in the solvent. Both these processes are considered to be interacting with some field. From the Hamiltonian of the complete system and of the relaxation processes, a system of differential equations for the probability that either

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molecule will be excited is derived. An approximate linear func-
tion for the solution is also obtained. The authors are connected
with the Institute of Theoretical Physics, Ukrainian Academy of
Sciences, at Kiev.

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USSR

UDC 612.821.2

VORONIN, L. G., KONOVALOV, V. F., and SERIKOV, I. S., Institute of Biophysics Academy of Sciences USSR, Pushchino-on-Oka

"Role of Reinforcement in the Formation and Short-Term Retention of Trace Processes in Man"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 5, 1971, pp 891-897

Abstract: The dynamics of the formation and retention of traces of indifferent stimuli with changes in the parameters of reinforcement was studied in 36 subjects age 14 to 24. The conditioned stimuli were sound or a contact stimulator and reinforcement was light lasting 0.5, 3, or 6 sec. In 3 series of experiments the subjects kept their eyes open while the light was on; in the 4th series, the subjects kept their eyes closed while the light was on for 3 sec. The conditioned and unconditioned responses were manifested by the galvanic skin reflex. In the first 3 series, the immediate and trace processes were most stable when reinforcement lasted 0.5 or 6 sec. The trace was reproduced for 100 to 120 sec and in some cases for 140 to 160 sec. However, it was reproduced for a much shorter period an average of 73 sec, after reinforcement lasting 3 sec. When the subjects kept their eyes closed, the galvanic skin reflex was quickly extinguished and drowsiness set in. Judging by the dynamics of the alpha and rolandic rhythms in the visual and rolandic areas, reproduction of the trace on the EEG lasted 18 to 36 sec, sometimes as long as 56 sec.

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USSR

VORONIN, L. G., Corresponding Member of the Academy of Sciences USSR, KONOVALOV, V. F., SENINA, R. YA., and SERIKOV, I. S., Institute of Biological Physics, Academy of Sciences USSR, Pushchino-na-Ok- River

"Correlation Between Electrographic Signs of Cerebral Processes and Short-Term Memory"

Abstract: The investigation was performed on 70 healthy children and adults aged 5-36 and 46 patients (cerebrosclerosis or alcoholism) whose bioelectrical currents were recorded (visual and motor cortex EEG, skin resistance, ECG, and EMG) while they were being exposed to auditory and visual stimuli and, the same time, the duration and the volume of their short-term memory was being determined by the answeres they supplied to questions (asked at progressively longer intervals) as to what they had seen or heard, how much of it, and in what sequence. The period during which the initial signs of cerebral excitation caused by the emotionally indifferent stimuli persisted in the skin-resistance records was longer in children and patients than it was in healthy adults. The volume of short-term memory, on the other hand, was greatest in healthy adults. Thus, there is a reciprocal correlation between the persistence of

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USSR

the initial signs and the short-term memory volume. In small children, the
power, flexibility, and balance of cerebral activity are not yet fully
developed, while in patients with brain damage they are deteriorated; as a
result, the initial signs are quenched with a delay. In healthy adults, the
well-established cerebral activity as well as the properly functioning
second signal system into which the information is transferred are responsible
for both the quick quenching of the initial signs and short-term memory of
greater capacity.

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1/3   025
UNCLASSIFIED
TITLE--ELECTROPHYSIOLOGICAL DATA ON INTERACTION OF APPRECIATED AND
UNAPPRECIATED TRACE PROCESSES IN MAN IN ONTOGENESIS -U-

PROCESSING DATE--20NOV70

AUTHOR-(04)-VORONIN, L.G., KONOVALOV, V.F., GROMYKO, M.M., SERIKOV, I.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 2, PP
431-440
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROPHYSIOLOGY, EEG, MEMORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0352

STEP NO--UR/0247/70/020/002/0431/0440

CIRC ACCESSION NO--AP0132585
UNCLASSIFIED

2/3   025

CIRC ACCESSION NO--AP0132585   UNCLASSIFIED   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. A STUDY WAS MADE OF THE DYNAMICS
OF FORMATION AND INTERACTION OF TRACE PROCESSES IN CHILDREN AGED FROM
FOUR TO SIXTEEN YEARS. IN THE FIRST SERIES OF EXPERIMENTS THE SUBJECT
WAS INSTRUCTED TO OPEN HIS EYES AND PRESS THE BUTTON ONLY WHEN THE LIGHT
WAS TURNED ON; IN THE SECOND SERIES, HE WAS TO REPRODUCE THE OPERATION
AT THE MOMENT WHEN THE LIGHT WAS DUE TO BE SWITCHED ON; IN THE THIRD
SERIES, HE WAS TO ACT BEFORE THE SWITCHING ON OF THE LIGHT.   FORMATION
OF TRACE REACTIONS WAS ACHIEVED WITHOUT DIFFICULTY IN THE SUBJECTS OF
ALL AGE GROUPS. EEG REACTIONS, SGR, OCULO MOTOR AND MOTOR REACTIONS
APPEARED BEFORE THE LIGHT WAS TURNED ON ALREADY IN THE FIRST EXPERIMENT.
BY THE SECOND TO THIRD EXPERIMENT, THEY WERE STABILIZED AND COULD
APPEAR IN 50-90PERCENT OF THE TRIALS. WHEN A CONSCIOUS EVALUATIONS OF
THE TRACE PAUSE WAS DUE (SECOND SERIES OF EXPERIMENTS) THE MOMENT OF THE
APPEARANCE OF THE LIGHT WAS UNDERESTIMATED IN MOST OF THE CASES.   IN
THE THIRD SERIES OF EXPERIMENTS, WHEN THE SUBJECTS WERE TRYING TO ACT
BEFORE THE LIGHT WAS SWITCHED ON, UNDERESTIMATION OF THE TIME WAS
RECORDER ONLY IN CHILDREN OF FOUR TO EIGHT YEARS OLD. THE 14 TO 16 YEAR
OLD SUBJECTS EXACTLY EVALUATED THE INTERVAL BY COUNTING. HOWEVER, IN
SPITE OF THESE UNDER AND OVER ESTIMATES, THE EEG RESPONSES SGR AND OTHER
REACTIONS APPEARED AT THE POINT OF THE ACTION OF THE SIGNAL (WHEN IT WAS
OMITTED) OR BEFORE ITS SWITCHING ON.   A CONCLUSION IS DRAWN THAT TRACE
PROCESSES IN FOUR TO EIGHT YEAR OLD CHILDREN ARE FORMED MAINLY AT THE
LEVEL OF THE FIRST SIGNAL SYSTEM, AND IN 14 TO 16 YEAR OLD SUBJECTS, AT
THE LEVEL OF BOTH SIGNAL SYSTEMS.

UNCLASSIFIED

3/3   025

CIRC ACCESSION NO--AP0132585   UNCLASSIFIED   PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--FACILITY: DEPARTMENT OF MEMORY PROBLEMS, INSTITUTE OF
BIOPHYSICS, USSR ACADEMY OF SCIENCES, PUSCHINO-ON-OKA.

UNCLASSIFIED

SERIKOV, R.I.

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENC: SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE: Measuring the Oscillation Relaxation Time of the $00°1$ Level of CO_2 Molecules in the Temperature Interval of 300° - 600°K

AUTHOR(S): Izmerenye vremeni kolebatel'noy relaksatsii urovnya 00°1 molekuly CO2 v intervale temperatur 300-600°K
Biryukov, A.S., Konyukhov, V.K., Serikov, R.I., and Trekhov, Ye. S.

PAGES: 5

SOURCE: Zhurnal prikladnoy spektroskopii, No. 2, 1972
Pages 249-252

ORIGINAL LANGUAGE: Russian

TRANSLATOR: CRM

NISC TRANSLATION NO. ___

APPROVED: ___
DATE: 20 June 1973

USSR

UDC 51:621.391

SERIKOV, V. A.

"Methods for Calculating the Time Relationship Function of Composite Codes"

Translation: One can obtain in the ordinary (cascade) method a single composite binary vector (code of length $N = \Pi_{i=1}^{l} N_i$ from l binary vectors *subcodes) of length N_1, N_2, ..., N_l. The algorithm for calculating the autocorrelation (periodic and aperiodic) functions of the composite code can be given with the aid of a graph, the arcs of which are values of the autocorrelation functions of the corresponding subcodes. The description of the graph of the matrices of the connections makes computer use possible for the calculations. It is shown that the application of this algorithm considerably reduces the volume of the computer memory required as compared with the ordinary algorithm. V. Zinov'yev.
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USSR

UDC: 51:621:391

SERIKOV V. A.

"Methods of Calculation of the Temporary Communications Function of Composite Codes"

Tr. Leningr. In-t Aviats. Priborostr. [Leningrad Institute of Aviation Instrument Building], 1972, No 74, pp 54-59 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V370, by V. Zinov'yev)

Translation: Of 1 binary vectors (subcodes) of length N_1, N_2,...,N_1, the ordinary (staged) method can be used to produce one composite binary vector (code) of length $N= \prod_{i=1}^{1} N_i$. The algorithm for calculation of autocorrelation (periodic and aperiodic) functions of the composite code can be fixed using a graph, the arcs of which are values of the autocorrelation functions of the corresponding subcodes. Description of the graph by a connection matrix allows computers to be used for calculation. It is shown that the use of the algorithm suggested greatly decreases the required memory volume of the computer in comparison with the ordinary algorithm.
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SERIKOV, V.A.   UDC: 621.394.14

"Method for Computing the Autocorrelation Function of Composite Codes"

Translation: The author determines a composite binary code of 1 order. This code is combined in a given manner from 1 binary subcodes. The number of digits in the period of the composite code is equal to the product of the length of the subcodes which form it. The algorithm for computing the autocorrelation function of the composite code can be given with the aid of a graph, whose arcs are the subvalues of the autocorrelation function of the corresponding subcodes. The description of the graph by means of a combination matrix makes it possible to use a computer in carrying out the computation. It is shown that the use of the proposed algorithm significantly decreases the demands on computer memory volume in contrast to using the generally accepted method. Original article: one illustration and two bibliographic entries. Resume.

1/1

USSR

BULGAKOV, A. A., PICHUGINA, L. V., SERIKOV, V. A., and SMIRNOV, G. A.

UDC 621.391:519.27

"Determining the Current Characteristics of Steady, Ergodic, Random Processes With Respect to Long Duration Realization Using the Razdan-2 Electronic Digital Computer"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation and Instrument Building), 1972, vyp. 74, pp 98-102 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A17)

Translation: The authors study the use of the Razdan-2 electronic digital computer for calculating the current characteristics of steady, ergodic, random signals obtained from a receiver, noise generator or magnetic recording instrument. Further insignificant improvements in the computer make it possible to register signals in real time after their discretization and quantization directly on the magnetic tape of the storage element, thus bypassing the memory unit. This increases the length of the analyzed realization by approximately two orders of magnitude. Recording in a single 4- and 8-digit element raises the higher signal discretization frequency. It is shown that the indicated improvements make it possible to carry out a broad program of statistical studies on realizations, up to one minute in duration, at a discretization frequency of up to 10-15kc and quantization to 256 levels. The accuracy of characteristic determination is evaluated. Original article: one illustration and two bibliographic entries. Resume.

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UDC 621.316.825.2

USSR

SERIKOV, V. K.

"Equation of the Temperature Characteristic of the Posistor ST5-1 for the Whole Temperature Range"

Issled. Teplofiz. Svoystv Materialov — Sb. / Investigations of Thermophysical Properties of Materials — Collection /, Minsk, 1971, pp 240—245 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 32. Single Issue No 1, 1972, Abstract No 1.32.1062, Resume)

Translation : An equation is suggested characterizing in some approximation the temperature characteristic of the posistor ST5-1, common both for the range with negative and positive thermal resistance coefficients. The temperature characteristic of the thermistor is assumed to be the basis. By means of introduction of special functions, the curve with negative thermal resistance coefficient acquires a positive thermal resistance coefficient in the necessary range. Three illustr., three biblio. refs.

1/1

Thin Films

GLAZER, A. A., SERIKOV, V. V., and SHUR, YA. S., Institute
of Physics of Metals, Academy of Sciences USSR

**"Study of the Process of Remagnetization of 'Supercritical'
Cobalt Films by Nuclear Magnetic Resonance"**

Abstract: Hysteresis loops of cobalt films 1400 and 9000 A thick in the "super-
critical" state are compared with the dependence of spin echo amplitude from the
field. The gain factors, relative numbers of nuclei participating in the reso-
nance, and NMR spectra are determined in the initial state, following annealing
at 470° and after separation of the film from the substrate. It is established
that during switching of these films, processes of rotation of magnetization are
significant. The type of domain structure in films of various thicknesses was
determined on the basis of the behavior of the NMR spectra after removal of film
from substrate.

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Thin Films

USSR

UDC 669.25:539.216.2:538.24

GLAZER, A. A., SERIKOV, V. V., and SHUR, YA. S., Institute of Physics of Metals, Academy of Sciences USSR

"Study of the Process of Remagnetization of 'Supercritical' Cobalt Films by Nuclear Magnetic Resonance"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 529-537

Abstract: Hysteresis loops of cobalt films 1400 and 9000 A thick in the "super-critical" state are compared with the dependence of spin echo amplitude from the field. The gain factors, relative numbers of nuclei participating in the reso-nance, and NMR spectra are determined in the initial state, following annealing at 470° and after separation of the film from the substrate. It is established that during switching of these films, processes of rotation of magnetization are significant. The type of domain structure in films of various thicknesses was determined on the basis of the behavior of the NMR spectra after removal of film from substrate.

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USSR

UDC 577.4

LIVSHITS, A. N., SERIKOV, YU. A.

"A Method of Synthesizing a Minimal Logical Network"

V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 63-67 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V267)

Translation: The investigated synthesis technique is known in literature by the name of "sorting." Although the authors also obtained a series of interesting formulas, they did not succeed in introducing any thing significantly new into the classical version of sorting.

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USSR

UDC 577.4

SERIKOV, YU. A., GORLITSYN, B. N.

"Algorithm for Calculating Minimal Solutions in the Logical Equations of a Special Type. Logical Solution of the Covering Problem"

V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 57-62 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V270)

No abstract

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SERIKOVA, A. Z.

CHANGES IN BLOOD COAGULATION UNDER THE INFLUENCE OF GRAVITATIONAL LOADS
DETERMINED FROM THROMBOELASTOGRAPHY DATA

[Article by A. Z. Serikova, L. F. Kunkina and T. P. Glebushko; Moscow,
Kosmicheskaya Biologiya I Meditsina, Russian, Vol 6, No 1, pp 10-14, 1972,
submitted for publication 17 November 1970]

Abstract: Acceleration-induced changes in blood coagula-
tion in cats were examined by thromboelastrographic and
coagulographic techniques. Exposure of the animals to
accelera:...s applied as a repeated (first group) or single
(second s..up) stress effect increased the anticoagulation
properties (activation of fibrinolysis, increase in heparin
content, decrease in the quantity of procoagulants). Hemo-
coagulation disturbances in the first group of animals were
greater, suggesting an effect from the gradient factor.
Hemocoagulation parameters tended to return to the normal
level on the sixth day after exposure.

The state of the blood coagulation system under the influence of dif-
ferent external factors has been studied by many authors. V. G. Petrukhin
(1963), Ye. M. Chazov and V. G. Ananchenko (1963), A. V. Yerenin and V. I.
Stepantsov (1970), and A. V. Drozdova (1970) observed an increase in pertoo-
tational stress on the living organism.   O. D. Anashkin (1968) noted changes
in the content of procoagulants and activation of the fibrinolytic system in
animals after flight on an artificial earth satellite. R. A. Burdina, et al.
(1970) demonstrated changes transpiring in the vascular and nervous systems
under the influence of gravitational loads.

In this investigation the experiments were made on cats which were sub-
jected to a single series of accelerations of 10 R (first group, eight cats)
and single exposure to an acceleration of 10 R (second group, six cats)
schedule formulated by Ye. A. Ilyskin and B. M. Savin (1970). The difference
in the gravitational stress for animals in the first and second groups was
that the animals in the first group experienced acceleration including exposure
to a gradient of increase in acceleration, its intensity and duration, whereas
animals in the second group were exposed to operation of only the latter two
factors.

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USSR

MOROZOV, A. A., SERKIN, A. F. and STEPANENKO, V. N.

"Structural Analysis of Transient Processes"

Metody i Sistemy Obrab. Eksperim. Inform. [Methods and Systems for
Processing of Experimental Information -- Collection of Works], Kiev,
1972, pp 42-48 (Translated from Referativnyy Zhurnal Kibernetika, No
10, 1973, Abstract No 10V210)

Translation: In order to study the properties of the transient proc-
esses of certain systems resulting from random perturbations, it is
suggested that structural connection functions and structural connection
matrices (in the vector case) be introduced. For example, the struc-
tural connection function of two processes $x_1(t)$ and $x_2(t)$, $0 \le t \le T$,
is fixed by the formula

$$r_{1,2}(T) = \frac{\int_0^T dt \int_0^{T-t} a_1(t, \tau)q_2(t, \tau)d\tau}{\int_0^T dt \int_0^{T-t} p(t, \tau)d\tau},$$

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MOROZOV, A. A., SERKIN, A. F. and STEPANENKO, V. N., Metody i Sistemy Obrab. Eksperim. Inform., Kiev, 1972, pp 42-48

where $q_i(t, \tau) = sign[x_i(t + \tau) - x_i(t)]$, $i = 1, 2$, but $p(t, \tau)$ is a certain weight function, $0 \le p(t, \tau) \le 1$.
Comparison of function $r_{1,2}(T)$ and the matrices composed from such functions with standard functions and matrices allows, in a certain sense, analysis of the transient processes generated by random perturbations.

R. Liptser

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USSR

PUDOVIK, N., YELISEYENKOV, V. N., SERKINA, N. A., and LIPATOVA, I. P.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
Sciences USSR

"Reactions of Amidophosphites with Alkylmethylphosphonic and Thiophosphonic
Acids"

Abstract: The action of alkylmethylphosphonic and alkylmethylthiophosphonic
acids on bis(diethylamido)alkylphosphites and tris(diethylamido)phosphite was
investigated. The reactions led to mixed anhydrides of methylphosphonic
(thiophosphonic) and amidophosphorous acids. The amount of diethylamine
(80-95 percent) formed in these reactions corresponds to the amount of mixed
anhydride (70-85 percent) formed, showing the lack of side reactions. The
diethylamine formed can react both with the anhydride formed, as well as form
a salt with the starting acid, $CH_3(RO)P(X)OH \cdot HNEt_2$, partially removing it from
the reaction. The reactions can occur both in an organic inert solvent, as
well as in its absence, and the yield of reaction products is not affected by
the order in which the starting reagents (acid to phosphite or vice versa) are
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PUDOVIK, N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya,
No 5, 1971, pp 1039-1044

added. To increase the yields of anhydrides, the reagents must be mixed in
the cold and after removal of the solvent the reaction mixtures must be heated
at 10-50 mm and 60-120° until diethylamine is no longer formed. The mixed
anhydrides obtained are saponified with water, forming the diethylammonium
salt of phosphorous acid; they add sulfur with evolution of heat, forming
pyrophosphonatothiophosphates.

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192   016

UNCLASSIFIED

TITLE--REACTION OF AMIDOPHOSPHITES WITH AMMONIUM SALTS OF ACIDS -U-

PROCESSING DATE--02OCT70

AUTHOR-(04)-YELISEYENKOV, V.N., PUDOVIK, A.N., FATTAKHOV, S.G., SERKINA, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 498

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE DERIVATIVE, AMMONIUM SALT, HYDROGEN CHLORIDE, ORGANIC PHOSPHORUS COMPOUND, TRIETHYLAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1570

STEP NO--UR/0079/70/040/002/0498/0498

CIRC ACCESSION NO--AP0112564

UNCLASSIFIED

2/2   016

CIRC ACCESSION NO--AP0112564

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING 12.4 G P(NET SUB2) SUB3 (I)
AND 6.9 G ET SUB3 N.HCL AT 80-90DEGREES IN VACUO (WATER PUMP) GAVE
53PERCENT (ET SUB2 N) SUB2 PCL, B SUB0.02 60DEGREES, N PRIME20 SUBD
1.4900; SIMILARLY 17.35 G I AND 7.7 G ET SUB2 NH.HCL GAVE ET SUB2 NH AND
61PERCENT (ET SUB2 N) SUB2 PCL.   AT 40DEGREES, 12.3 G I AND 10.6 G
ETMEP(S)CH.ET SUB2 NH GAVE 100PERCENT ET SUB2 NH AND 61PERCENT (ETSUB2
N) SUB2 POP(S)MEET, B SUB0.007 82-3DEGREES, D PRIME20 1.0368, N PRIME20
SUBD 1.4890. SIMILARLY, 8.5 G ACOH.ET SUB3 N AND 13.1 G (ET SUB2
N)P-(OBU) SUB2 GAVE A MIXT. CONTG. 6.7 G (BEO) SUB2 PHO, 0.9 G (BUO)
SUB2 POAC, AND 3.8 G ACNET SUB2. THUS, REACTION OF P(III) AMIDES WITH
AMINE SALTS IS REVERSIBLE, AND REMOVAL OF THE AMINE AS FORMED MAY BE
USED TO DISPLACE THE EQUIL. IN THE DIRECTION OF FORMATION OF PRODUCTS
SHOWN ABOVE BY REMOVAL OF R SUB2 NH.

USSR

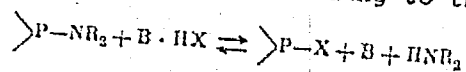YELISEYENOKOV, V. N., PUDOVIK, A. N., FATTAKHOV, S. G., and SERKINA, N. A., Kazan, Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Amidophosphites With Ammonium Salts of Acids"

Abstract: The authors report finding that reactions of amidophosphites with amine hydrochlorides and salts of carboxylic and phosphorus-containing acids are reversible and proceed according to the equation

$$\text{\large$>$}P{-}NR_2 + B \cdot HX \rightleftarrows \text{\large$>$}P{-}X + B + HNR_2$$

B = amine; X = Hlg, Ac, P(O)O and P(S)O; R = Alk.

The authors regard the results as important for elucidating the mechanism involved in the phosphorylation of amines and alcohols with amidophosphites, and the question will be considered in a special article.

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1/2   020   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--EFFECT OF SUPRAMOLECULAR STRUCTURE ON THE STRENGTH OF SINGLE FIBERS
 OF VISCOSE RAYON CORD -U-
AUTHOR-(03)-SERKOV, A.T., ZUBAKHINA, N.L., GORBACHEVA, V.O.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 60-1

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MOLECULAR STRUCTURE, RAYON, POROSITY, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2010   STEP NO--UR/0133/70/000/002/0060/0061

CIRC ACCESSION NO--AP0125598
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0125593
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SWELLING OF RAYON FIBERS IN
  AQ. NAOH SOLNS. HAS A MAX. AT 6PERCENT NAOH CONCN. THE MAX. IS
  CONSIDERABLY HIGHER FOR HIGH STRENGTH FIBERS. ALSO STRONGER FIBERS HAVE
  LOWER DISSOLUTION RATES IN CONCD. NAOH SOLNS. AND HIGHER LIGHT
  BIREFRINGENCE INDEXES.   THE FIBER STRENGTH DEPENDS NOT ONLY ON THE
  FIBER POROSITY AND THE PRESENCE OF DEFECTS, BUT ALSO ON THE FIBER
  ORIENTATION.

UNCLASSIFIED