USSR

UDC 621.372.413

SUSHKIN, V. N.

"Calculating the Characteristics of Laser Resonators with a Coupling Hole"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 108, pp 114-118 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6B211)

Translation: A method is given for solving the integral equation of a confocal band resonator using the Filon formula. The bibliography has 4 entries.

1/1

USSR

KULIKOV, A. V., LIKHTENSHTEYN, G. I., ROZANTSEV, E. G., SUSKINA, V. I., and SHAPIRO, A. B.

"Possibility of Determining the Distance Between Functional Protein Groups by the Spin-Label Method"

Abstract: A set of iminoxyl polyradicals with a known structure was used to analyze the possibility of determining the relative position of the spins of iminoxyl fragments from the shape and second moment of the ESR spectra of spin-labeled proteins (egg lysozyme, sperm whale myoglobin, and rabbit muscle myosin) at T = 77° K. The ESR spectra were found to be sensitive to the distance between spins if it did not exceed 17 to 18 Å. (The method of second moments can be used to estimate the distance between iminoxyl fragments in the 8 to 16 Å interval). The spin-label method was used to estimate the distance between the functional groups in lysozyme (histidine and lysine groups), myoglobin (histidine groups), and myosin (sulfhydryl groups). The results in the case of lysozyme and myoglobin were consistent with the X-ray diffraction models of these proteins.

1/1

Biophysics

USSR

UDC 577.3

CHUMAKOV, V. M., GRIGORYAN, G. L., SUSKINA, V. I., ROSANTSEV, E. G., and KAL-
MANSON, A. E., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical
Sciences USSR, and Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Study of Spin Labels in Animal Tissues"

Abstract: The stable free iminoxyl radicals 2,2,6,6-tetramethyl-4-aminopiperidine-
-1-oxyl and its maleic acid imide derivative were injected intraperitoneally
to rats, mice, and frogs in aqueous solutions in a dose of 500-600 mg/kg.
Within 2-4 hrs after injection of the solutions, the lyophilized tissues of the
animals exhibited EPR spectra indicating the presence of firmly fixed (immobil-
ized) free radicals. Wetting of the tissues with physiological saline solution
transformed the EPR signal of firmly fixed free radicals into one typical for
radicals with a higher mobility. On treatment of the lyophilized tissues with
water vapor and O_2, the concentration of iminoxyl radicals, as indicated by the
EPR spectrum, first increased to a maximum and then gradually decreased. The
mositure content of the tissue samples in these experiments was brought to only
10% (i.e., only bound water was present), os that the radicals remained in the
firmly fixed state. It was shown in earlier work by Chumakov and Kalmanson that

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USSR

CHUMAKOV, V. M., et al., Biofizika, Vol 16, No 3, May/Jun 71, pp 564-565

under these conditions the EPR tissue semiquinone signal associated with the semiquinone of coenzyme Q also increases and, on passing through a maximum, finally disappears. In the present work, disappearance of this signal, which contributed to the central component of the iminoxyl radical EPR spectrum, resulted from changes in the tissues spectrum (e.g., rat liver tissue) upon treatment with water vapor and O_2. A reaction between the iminoxyl and semiquinone radicals in the tissues could be assumed. The fact that the iminoxyl radicals react with semiquinones in a reversible reaction with the formation of hydroxylamines was established in experiments conducted in vitro in which semiquinones derived from benzoquinone, duroquinone, and naphthoquinone were applied. The results obtained indicated that iminoxyl spin lables are convenient redox indicators for the study of processes of electron transfer in the respiration chain of biological oxidation in mitochondria.

2/2

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SUSHKO, B. I.

- 196 -

XIII-9. STUDY OF THE PROPERTIES AND CONDITIONS OF GROWTH OF EPITAXIAL LAYERS OF GALLIUM ARSENIDE FROM SOLUTION IN A GALLIUM MELT

[Article by J. Zc. Harawchuk, G. S. Frantskiy, Yu. G. Pukhov, B. I. Sushko, Sinteza (blyuprovoonikovykh Kristallov; Plenok, III Simpozium po Protsessam Rosta i Plenok, Russian, 12-17 June 1972, p 191]

The epitaxial layers of gallium arsenide were grown from a solution in a gallium melt in a vertical reactor. The gallium melt placed in a container of carbon glass was saturated by arsenic by decomposition of AsCl₃. A study was made of the effect of the growth temperature, the cooling rate, the melt volume and the orientation plane of the substrates on the morphology, the growth rate and the electrical characteristics of the epitaxial layers. The sources of uncontrolled admixture were analyzed for growth of the gallium arsenide lay-ers.

USSR

SUSHKO, V.A.

" On The Cut-Off Switching Frequency Of Regulator Transistors In Pulse-Duration Voltage Regulators"

UDC 621.316.722.1

Translation: Three circuits of power amplifiers with pulse duration modulation are compared, with the object of determining the dependences of the cut-off switching frequency. The dependence of the maximum permissible switching frequency for all three circuits is derived from the common expressions for full power which is dissipated by a transistor in a switch [ключевой] regime. In the circuit of a power amplifier with a center point, the relative time of the switching state of each transistor is one half as much as in the circuit of a voltage regulator with pulse duration modulation. In a bridge circuit for a power amplifier, the relative time of the switched on state of each transistor is the same as in the circuit with a center point; however, the voltage at the cut-off transistor is approximately equal to the feed voltage, i.e., half as much as in the circuit with the center point. The considerations mentioned make it possible

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USSR

SUSHKO, V. A., Vestn. Kiyev. politekhn. in-ta. Ser. radioektron., 1970, No 7, pp. 93-95 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B465)

for the writer to conclude that with equal output power, a bridge circuit for a power amplifier can assure operation with a larger switching frequency that the circuit of a switch regulator with pulse duration modulation and a circuit for an amplifier with a center point. 3 ill. 1 ref. V. Sh.

USSR

SUSHKO, V. G.

"Approximate Solutions of One Quasilinear Equation Having a Small Parameter with the Leading Derivative"

Moscow, Nekotor. primeneniya metoda setok v gaz. dinamike -- Sbornik (Applications of Grid Methods in Gas Dynamics -- Collection of Works), No 2, Moscow State Univ. Pub. House, 1971, pp 145-251 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B958, by I. Shelikhova)

Translation: In the strip D { $0 \leqslant t \leqslant T$, $-\infty < x < \infty$ } Cauchy's problem is considered for the equation

$$L_\varepsilon u \equiv \varepsilon \frac{\partial^2 u}{\partial x^2} - \frac{\partial \varphi(t, x, u)}{\partial x} - \frac{\partial u}{\partial t} - \psi(t, x, u) = 0, \qquad (1)$$

$$\varepsilon = \text{const}$$

(problem A_ε), and for the equation

$$L_0 u = 0$$

(problem A_0). On the assumption of sufficient smoothness for the initial function, evaluations were made for the derivatives of the solution of

1/2

USSR

SUSHKO, V. G., _Nekotor. primeneniya metoda setok v gaz. dinamike -- Sbornik_ (Applications of Grid Methods in Gas Dynamics -- Collection of Works), No 2, Moscos State Univ. Pub. House, 1971, pp 145-251 (from _Referativnyy Zhurnal -- Matematika_, No 7, July 71, Abstract No 7B958, by I. Shelikhova)

problem A_ε appearing in equation (1) in the norms of the spaces $C(D)$ and $L_1(d)$. Specific properties of the approximate solutions of problem A_ε, whose structure depends on local differential properties of the solution of problem A_0, are described, in the regular, and irregular cases. Evaluations of their errors are made (using truncating functions and the concept of the potential of the solution), given different assumptions on the proximity of the approximate and exact solutions of the A_ε problem. An evaluation is obtained for the rate of convergence of the solution to the A_ε problem. Two methods of obtaining approximate solutions of the A_ε problem are outlined that possess the specific properties described, in the form of a polynomial or asymptotic series in powers of ε (with cofactors dependent on ε). A set of admissible initial conditions for the A_ε problem is described. (24 bibliographic references)

2/2

- 11 -

USSR

SUSHKOV, A. D., MEOS, V. A., FEDOROV, V. A.

UDC 621.385.6

"Study of Two-Gap Input Device of Microwave Amplifiers With Quasi-Static Control"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of the Leningrad Electrical Engineering Institute), 1970, Issue 96, pp 15-19 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8A169)

Translation: The results are presented of an experimental study proposed by one of the authors, of the two-gap input device of a microwave amplifier, with the object of determining the possibility of its use in microwave tetrode amplifiers for modulation of a convective electron stream with respect to density. A model was studied of a tetrode based on a 6S5D (triode) tube. The input microwave signal was fed into a cavity formed by the space cathode-control grid. The amplified signal was led out from a cavity formed by the space-grid-anode. The study was conducted at a frequency of 900 MHz. It is shown that the device has definite advantages over familiar circuits and makes it possible to increase considerably the amplification factor of a tetrode amplifier. R.M.

1/1

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USSR

SRAGOVICH, V. G., SUSHKOV, B. G., FLEROV, YU. A.

UDC 51

"Two-Level Adaptive System of Decentralized Control of Technological Processes"

V sb. Detsentralizovan. metody upr. (Decentralized Control Methods--collection of works), Moscow, 1972, pp 39-42 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V401)

No abstract

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172   039

UNCLASSIFIED

TITLE--THEORETICAL AND EXPERIMENTAL PROBLEMS IN THE STUDY OF THE
MECHANISMS OF THE VESTIBULAR NYSTAGMUS -U-

PROCESSING DATE--23OCT70

AUTHOR-(04)-RAZUMEYEV, A.N., SRAGOVICH, V.G., SUSHKOV, B.G., SHIPOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
22-30

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SPACE MEDICINE, VESTIBULAR DISTURBANCE, EYE, VISUAL
PERCEPTION, SENSORY PHYSIOLOGY, MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1969

STEP NO--UR/0453/70/004/000/0022/0030
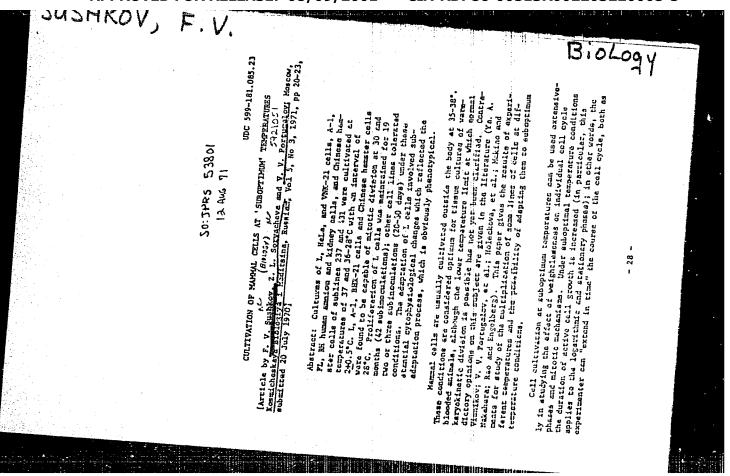
CIRC ACCESSION NO--AP0120612

UNCLASSIFIED

2/2   039

CIRC ACCESSION NO--AP0120612   UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF PUBLISHED STUDIES CONCERNING THE MECHANISMS OF THE VESTIBULAR NYSTAGMUS. A MATHEMATICAL MODEL OF THE INTERACTION BETWEEN THE VESTIBULAR AND OCULOMOTOR APPARATUSES IS PROPOSED AS THE BASIS OF A POSSIBLE MECHANISM OF THE DEVELOPMENT OF A VESTIBULAR NYSTAGMUS. THE ANATOMICAL AND PHYSIOLOGICAL CORRELATIONS BETWEEN THE COMPONENTS OF THIS MODEL DURING THE PROCESSING OF AFFERENT INFORMATION ARE DISCUSSED. EXPERIMENTS DESIGNED TO BRING THIS MODEL CLOSER TO THE CEREBRAL STRUCTURES RESPONSIBLE FOR THE NYSTAGMUS ARE DESCRIBED.

UNCLASSIFIED

SUSHKOV, F.V.

BioLogy

CULTIVATION OF MAMMAL CELLS AT 'SUBOPTIMUM' TEMPERATURES

Abstract: Cultures of L, HeLa, and VNK-21 cells, A-1, PL, RH human amnion and kidney cells, and Chinese ham- ster cells of sublines 237 and 431 were cultivated at temperatures of 37 and 36-28°C with an interval of 29.5°C. L, A-1, BHK-21 cells and Chinese hamster cells were found to be capable of mitotic division at 30 and 28°C. Proliferation of L cells was maintained for 19 months (42 subinoculations); other cell lines tolerated two or three subinoculations (20-30 days) under these conditions. The adaptation of L cells involved sub- stantial cytophysiological changes which reflected the adaptation process, which is obviously phenotypical.

Mammal cells are usually cultivated outside the body at 35-38°. These conditions are considered optimum for tissue cultures of warm- blooded animals, although the lower temperature limit at which karyokinetic division is possible has not yet been clarified. Contra- dictory opinions on this subject are given in the literature (Ya. A. Vitmikov; V. V. Portugalov; Nolechkova, et al.; Makino and Makadhara; Rao and Engelberg). This paper gives the results of experi- ments for study of the multiplication of some lines of cells at dif- ferent temperatures and the possibility of adapting them to suboptimum temperature conditions.

Cell cultivation at suboptimum temperatures can be used extensive- ly in studying the effect of weightlessness on individual cell cycle phases and mitotic mechanisms. Under suboptimal temperature conditions the duration of active cell growth is increased (in particular, this applies to the logarithmic and stationary phases); in other words, the experimenter can "extend in time" the course of the cell cycle, both as

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USSR

UDC 621.791.053.004.64:669.715

KRYUKOVSKIY, V. N., Candidate of Technical Sciences, NOVIKOV, O.
M., Engineer, MESHKOVA, O. V., Candidate of Technical Sciences,
and SUSHKOV, V. N., Engineer

"Discontinuities in Welds of Alloy AMg6 in the Presence of Oxide
Inclusions"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 25-27

Abstract: The article describes results of a study of the rea-
sons for the formation of discontinuities in welds of alloy AMg6.
Weld discontinuities due to the presence of oxide skins can be
divided into two types, viz. long ones forming along the axis of
the weld (poor fusion) and short ones situated at an angle to the
axis of the weld. The first type results from poor preparation
of the groove face surface, shifting of the arc relative to the
butt, as well as increased butt gap. The second type results
from oxidation of the filler wire and groove face surface during
welding. For purposes of establishing the quantitative depend-
ence of total discontinuity length on the butt gap size, 500 x
1/2

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USSR

KRYUKOVSKIY, V. N., et al., Svarochnoye Proizvodstvo, No 12, Dec 70, pp 25-27

250 x 4 mm plates were welded with a gap of 0.25-3.0 mm. Single-phase and three-phase nonconsumable-electrode argon welding was used.   The results indicate that there is a range of butt gap values (1.0-1.5 mm) in which there is a minimum cathode sputtering area and a maximum discontinuity length. This range is wider in single-phase than in three-phase welding. An accelerated single-phase welding regime (increasing the weld rate from 10-15 to 20-25 m/hr with a corresponding increase in the welding current) contributes to more complete breakdown and dispersion of the oxide skins, resulting in over a threefold decrease in the total discontinuity length. The assembly and fixation of weldable elements with a minimum butt gap and the use of accelerated procedure and a three-phase instead of a single-phase arc are recommended to prevent the formation of discontinuities due to oxide inclusions in welds.
2/2

USSR

UDC: 8.74

SUSHKOV, Yu. A.

"Use of Methods of Mathematical Programming for Synthesis of Planetary Systems by Computer"

Vychisl. Tekhn. v. Mashinostr. Nauch.-tekhn. Sb. [Computer Equipment and Machine Building, Scientific and Technical Collection], 1971, pp 39-45 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V592, by the author)

Translation: Problems of selection of plans for planetary transmissions reproducing a fixed range of transfer numbers to the maximum extent are studied. It is suggested that special criteria be used to estimate the similarity of the transfer numbers required and actually achieved, minimization of the criteria to be performed by random search in combination with a dynamic procedure.

1/1

INCORPORATION OF C14 FROM RADIOACTIVE ACETATE INTO TISSUES AND COMPONENTS OF TISSUES IN HENS OF DIFFERENT AGE GROUPS

V. V. Sushkova, M. F. Guly

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The dynamics was studied of C14 incorporation from sodium acetate into proteins of liver, lipids and glycogen of the liver and muscles into proteins of blood serum as well as into tissue of the myocardium and pectoralis in cocks of different age. Radioactivity was determined 30, 60, 90 and 120 min (in some cases 40 min) after introducing the isotope indicator.

It is shown that incorporation and excretion of the radioactive label in chickens proceeds quicker than in adult hens. Maximum of C14 incorporation into proteins, lipids

REEL/FRAME
19790863

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AP0047338

and glycogen of liver in chickens begins in 40 min after introducing 2-C¹⁴ acetate and in cocks at the age of 18 months in 1.5 hrs. In hens of the same age incorporation of C¹⁴ into the myocardium occurs more intensively and quicker than in pectoralis. With age the intensity of label incorporation into tissues and components of tissues lowers in hens. The sharpest difference in C¹⁴ incorporation with age is observed in 30 min after labelling. The lowering in the intensity of the label incorporation into proteins, lipids and glycogen of the liver is particularly pronounced when comparing groups of 1—3- and 6—18-month cocks. Trustworthy differences are not found between the values of specific radioactivity of proteins, lipids and glycogen of the liver in 6- and 18-month cocks.

19790864

JPRS 59368
6.73

3

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VI-2. STUDY OF THE GROWTH PROCESS OF STRONGLY ALLOYED GALLIUM ARSENIDE CRYSTALS

[Article by M. Ya. Dashevskiy, L. M. Kotobrodov, V. A. Suskina, Moscow; Novosibirsk,
III Simposium po Processam Rosta i Sinteza Poluprovodnikovykh Kristallov]
[Tekst, Russian, 12-17 June, 1972, p 69]

1. A study was made of the problem of obtaining single-crystals strongly
alloyed with donor additives and dendrites of semiconducting compounds of the
$A^{III}B^V$ type, including the problem of obtaining crystals with maximum electron
concentration.

2. Single crystals of gallium arsenide were obtained with an electron
concentration of $2 \cdot 10^{19}$ cm^{-3}. The gallium arsenide was alloyed with selenium
(77°K) and alloyed with selenium concentration of $1.9 \cdot 10^{19}$ cm^{-3} and $2.4 \cdot 10^{19}$ with tel-
(300°K) and $9.6 \cdot 10^{19}$ cm^{-3} (77°K) were obtained with an electron concentration of $1.9 \cdot 10^{19}$ cm^{-3}
Ok. G. Mil'vidskiy, O. V. Pelevin, L. Visland, Gaas crystals were obtained in
which the greatest electron concentration was $1.2 \cdot 10^{19}$ cm^{-3} (300°K).

3. A procedure is presented for obtaining single crystals strongly alloyed
with selenium and tellurium and gallium arsenide dendrites from melts of
stoichiometric and nonstoichiometric compositions. A model is proposed of the
entry of atoms of VI B elements into the lattice of $A^{III}B^V$ compounds based on
an investigation of the phase equilibrium in the $A^{III}_3B^V_6C^{VI}_{...}$ system, the degree
of deviation of the crystallized phase from the stoichiometric composition and
the possible structure of the melt (solution).

Biochemistry

ROZANTSEV, E. G., SUSKINA, V. I., IVANOV, Yu. A., and KASPRUK, B. I.,
Institute of Chemical Physics, Academy of Sciences USSR

"New Spin Labels and Sounding Markers for Biological Studies"

Abstract: A series of new stable mono- and biradicals of the iminoxyl type
has been synthesized. The products -- di-2,2,6,6,-tetramethyl-1-oxyl-4-
piperidyl esters of various acids -- can be used as spin labels and sounding
markers for biological studies.

1/1

Organophosphorous Compounds

SHAPIRO, A. B., KROPACHEVA, A. A., SUSKINA, V. I., ROZYKOV, B. V., and
ROZANTSEV, E. G., Institute of Chemical Physics, Academy of Sciences USSR,
and All-Union Institute of Pharmaceutical Chemistry imeni S. Ordzhonikidze

"Mass Spectrometric Study of Ethylenephosphoramide Paramagnetic Derivative"

Abstract: The authors synthesized previously unknown paramagnetic derivatives
of 2,2,5,5-tetramethylpyrrolidine-1-oxyl-3-amido- and 2,2,6,6-tetramethyl-
piperidine-1-oxyl-4-amidodiethyleneimidothiophosphoric acid and made a mass
spectrometric study of their fragmentation by electron impact. A mechanism
is suggested for the decay of molecular ions of ethylenephosphoramide para-
magnetic derivatives.

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1/2   012

TITLE--SYNTHESIS AND EPR SPECTRA OF SOME NEW IMINOXY BIRADICALS -U-

UNCLASSIFIED

PROCESSING DATE--23OCT70

AUTHOR-(04)-SHAPIRO, A.B., SUSKINA, V.I., FEDOROVA, V.V., ROZANTSEV, E.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 694-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EPR SPECTRUM, MOLECULAR STRUCTURE, ORGANIC SULFUR COMPOUND, IMINE, FREE RADICAL, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1777

STEP NO--UR/0062/70/000/003/0694/0696

CIRC ACCESSION NO--AP0123574

UNCLASSIFIED

UNCLASSIFIED

012

CIRC ACCESSION NO--AP0123574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. HEATING S((CH SUB2) SUB2 CO SUB2 H) SUB2 IN C SUB5 H SUB6 WITH SOCL SUB2 4 HR GAVE THE ACYL DICHLORIDE, WHICH, FREED OF THE SOLVENT AND RESIDUAL SOCL SUB2 IN VACUO, AND 2,2,6,6,TETRAMETHYL,4,HYDROXYPIPERIDINEOXY RADICAL GAVE AFTER REACTION IN C SUB6 H SUB6 IN THE PRESENCE OF ET SUB3 N 12 HR AT ROOM TEMP. 62PERCENT I (N EQUALS 2), M. 60.5-1.5DEGREES. SIMILARLY WERE PREPD. I (N EQUALS 4), M. 71-2DEGREES, 73.8PERCENT; I (N EQUALS 6), 50PERCENT, OIL; AND I (N EQUALS 10), OIL, 48PERCENT. EPR SPECTRA WERE GIVEN AND DISCUSSED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

PROCESSING DATE--23OCT70

UNCLASSIFIED

USSR

UDC 621.314.28:681.325.3.088

SUSHKO, A. F., SOROKIN, A. A., and KHOKHRYAKOV, M. V.

"Determination of the Static Reference Error of the Code-Voltage Matrix Transformer With an Only Source of the Reference Electromotive Force"

Translation: An investigation is made of the effect of the differential resistance of the reference emf source and of the reference emf deviation from its nominal value on the working accuracy of the code-voltage matrix transformer, making use of a star-like matrix and a single emf reference source. An analytical expression is presented for the calculation of the static reference error at any point of the discrete voltage scale of the transformer. A method is given for determining extreme values of the reference error and scale points of the transformer in which the error reaches an extreme. Two illustrations, three bibliographical references.
1/1

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USSR

PYATKIN, Ye, K., SUSKOV, I. I., and PETROVA, S. A., Institute of Biophysics, Moscow

UDC 611-018.46-018.13-086.2

"The Dependence of the Type and Frequency of Chromosome Aberration Induced by Gamma Rays in Human Bone Marrow Cells During Local Irradiation on the Method of Hypertonic Processing"

Moscow, Laboratornoye Delo, No 1, 1973, pp 6-8

Abstract: Bone marrow samples were collected from the iliac bone and the sternum of patients 24 hrs after a single therapeutic irradiation with 100, 200, 277, and 300 rad of Co^{60} gamma rays. The samples, containing at least 4 million cells, were suspended in medium No 199, incubated at $37^\circ C$ for 1 hr, resuspended, divided into two equal portions, and centrifuged. The supernatant fluid was removed, and 7 ml of a warm 0.5% KCl solution added to one portion, while an equal volume of Hanks' solution diluted with distilled water (1:3) was added to the other portion. The cells were left in the hypotonic solutions for 10-15 min and then fixed and stained. In bone marrow cells treated with hypotonic KCl, the observed proportion of metaphases suitable for analysis was 60-70%, and a considerably larger number of aberrant cells, chromatide type aberrations (chromatid fragments and exchanges), and

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USSR

PYATKIN, Ye. K., et al, Laboratornoye Delo, No 1, 1973, pp 6-8

paired fragments were observed than after treatment with diluted Hanks'
solution (only 30-40% of metaphases suitable for analysis), though no signifi-
cant difference was detected in the frequency of chromosome-type aberration
(dicentrics and rings). The average frequency of chromatid fragments and
exchanges per aberrant cell after treatment with KCl was more than twice as
high as after treatment with Hanks' solution. Thus, in the latter case, a large
number of aberrant metaphases, especially those with chromatid type aberrations,
become unsuitable for cytological analysis.

2/2

DISTRIBUTION AND EXCRETION FROM MICE (INTACT AND WITH UNCLASSIFIED

TRANSPLANTABLE TUMORS) OF C PRIME14 AURANTIN -U-

AUTHOR-(05)-SUSKOVA, V.S., KHASIGOV, P.Z., CHERNOV, V.A., KARPOV, V.L.,

SEREBRYAKOV, N.G.

COUNTRY OF INFO--USSR

PROCESSING DATE--16OCT70

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 437-441

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MOUSE, TISSUE TRANSPLANT, TUMOR, SARCOMA, LYMPHATIC SYSTEM,
LIVER, KIDNEY, LUNGS, SPLEEN, SMALL INTESTINE, RADIOACTIVE TRACER,
THYMUS GLAND, AUTINEOPLASTIC DRUG, CARBON ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1141

CIRC ACCESSION NO--AP0115160

STEP NO--UR/0297/70/015/005/0437/0441

UNCLASSIFIED

CIRC ACCESSION NO--AP0115160   UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   DISTRIBUTION OF C PRIME14 AURANTIN IN MICE INTACT AND WITH TRANSPLANTABLE LYMPHOLEUCOSIS NK-LY AND LYMPHOSARCOMA LIO 1, AND ITS EXCRETION AFTER SINGLE INTRAVENOUS OR SUBCUTANEOUS ADMINISTRATIONS WERE STUDIED. THE DISTRIBUTION OF THE DRUG WAS NOT REGULAR.   RADIOACTIVITY IN THE LIVER, KIDNEYS, LUNGS AND SPLEEN REGISTERED IN 30 TO 60 MINUTES AFTER THE DRUG ADMINISTRATION WAS REDISTRIBUTED IN 6 HOURS AFTER INTRAVENOUS ADMINISTRATION AND IN 18-24 HOURS AFTER SUCUTANEOUS ADMINISTRATION WITH AN INCREASE IN ITS LEVELS IN THE SPLEEN, THIN INTESTINE, THYMUS. MAXIMUM ACTIVITY IN TUMORS WAS OBSERVED BY THE END OF 24 HOURS, THE LEVEL IN NK-LY BEING HIGHER THAN IN LIO 1.   AFTER INTRAVENOUS ADMINISTRATION THE ORGANS WERE MAINLY FREE FROM ACTIVITY BY THAT TIME, WHILE AFTER SUCUTANEOUS ADMINISTRATION THE ORGANS WERE MAINLY FREE FROM ACTIVITY BY THE END OF THE 2ND DAY AND LATER.   AFTER SUBCUTANEOUS ADMINISTRATION OF C PRIME14 AURANTIN FOR 3 TIMES AT AN INTERVAL OF 48 HOURS NO ACCUMULATION OF THE DRUG IN THE ORGANS AND TISSUES, INCLUDING TUMORS WAS OBSERVED. THE RESULTS OBTAINED ARE DISCUSSED.   FACILITY: INSTITUTE OF MEDICAL RADIOLOGY OF ACADEMY OF MEDICAL SCIENCES OF THE USSR, OBNINSK.

UNCLASSIFIED

CHEMICAL PREVENTION OF UNCLASSIFIED IRRADIATION BY HIGH ENERGY PROTONS OF THE IMMEDIATE AND DELAYED EFFECTS OF IN A WIDE DOSE RANGE -U-

AUTHOR-(03)-YARMONENKO, S.P., SUSLIKOV, V.I., MAKARENKO, I.G.

PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 83-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIRADIATION DRUG, AMINE DERIVATIVE, PROTON RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0459

CIRC ACCESSION NO--AP0121133

STEP NO--UR/0205/70/010/001/0083/0088

UNCLASSIFIED

CIRC ACCESSION NO--AP0121133   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROTECTIVE EFFECT OF MEXAMINE
(I) WAS STUDIED ON IMMEDIATE AND DELAYED CONSEQUENCES OF IRRADN. WITH
HIGH ENERGY PROTONS. MICE (23-26 G) RECEIVED (I.P.) 1.5 MG I PER ANIMAL
3-5 MIN PRIOR TO THE IRRADN. THE PROTON ENERGY WAS 600 MEV, WITH DOSES
OF 600-1300 RADS. THE COEFF. OF PROTECTION AFTER 30 DAYS RANGED BETWEEN
0.6 AND 1.0 OVER THE DOSE INTERVAL OF 1300 TO 700 RAD. MODERATION OF
THE DELAYED CONSEQUENCES OF THE IRRADN. WAS MANIFESTED TO A LESSER
EXTENT. FOR 600-900 R THE COEFF. OF PROTECTION WAS 0.79 AND 0 WHEN
MEASURED AFTER 30 AND 490 DAYS, RESP.   FACILITY: INST. EKSP.
KLIN. ONKOL., MOSCOW, USSR.

PROCESSING DATE--30OCT70

UNCLASSIFIED

USSR

GROSS, Ye. F., PLYUKHIN, A. G., SUSLINA, L. G., SHADRIN, Ye. B.

"Luminescence and Resonant Combination Scattering in $Zn_xCd_{1-x}Te$ Crystals"

Abstract: Resonant combination scattering in semiconductors has been the subject of a number of works. However, until now there have been no detailed investigations of the behavior of the intensity of the scattered light with a continuous change in frequency in the area of exciton absorption. This is the subject of the present article. The experiments were performed with a helium-neon laser at 4.2° K and 77° K. Concentration x in the specimens studied was varied between 0.4 and 0.5, corresponding to a change in the width of the forbidden zone from 1.905 to 1.955 ev at 4.2° K. The studies indicate that the resonant nature of combination scattering is related to excitation of free excitons in the mixed crystals studied.

1/1

CARBIDE FORMATION PROCESSES UNCLASSIFIED

DIFFUSION CONTROLLED, GAMMA ALPHA TRANSFORMATION IN NIOBIUM CONTAINING STEELS DURING A PROCESSING DATE--04DEC70

AUTHOR-(03)-GOLDSHTEYN, M.I., SUSLOPAROV, G.D., KOLOSOVA, E.L. -U-

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, VOL. 29, MAR. 1970, P. 625-631

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBIDE, NIOBIUM CONTAINING ALLOY, METAL BRITTLENESS, ALLOY DESIGNATION, MANGANESE STEEL, NIOBIUM STEEL, LOW ALLOY STEEL, ALLOY PHASE TRANSFORMATION, AUSTENITE, METAL FERRITE PHASE/(U)20G8 MANGANESE NIOBIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0071

CIRC ACCESSION NO--AP0125906   STEP NO--UR/0126/70/029/000/0625/0631

UNCLASSIFIED

ACCESSION NO--AP0125906   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE FORMATION OF NIOBIUM

CARBIDES IN A HYPOEUTECTOID STEEL 20GB, CONTAINING 0.087PERCENT NB,

DURING THE GAMMA ALPHA TRANSFORMATION. IT IS FOUND THAT THE FORMATION

OF NIOBIUM CARBIDES PROCEEDS IN SEVERAL STAGES: (1) IMMEDIATELY IN THE

SUPERCOOLED AUSTENITE, (2), IN THE PROEUTECTOID FERRITE, AND (3) IN THE

EUTECTOID FERRITE. A RELATIONSHIP IS ESTABLISHED BETWEEN THE

BRITTLENESS OF THIS STEEL AND THE DISTRIBUTION CHARACTERISTICS OF

CARBIDE PARTICLES.   FACILITY: URAL'SKII

NAUCHNO-ISSLEDOVATEL'SKII INSTITUT CHERNOI METALLURGII, SVERDLOVSK,

USSR.

PROCESSING DATE--04DEC70

UNCLASSIFIED

TITLE--PROCESSES OF CARBIDE FORMATION DURING THE DIFFUSION GAMMA YIELDS
   ALPHA TRANSFORMATION IN MOLYBDENUM STEELS -U-
AUTHOR-(03)-KOLOSOVA, E.L., GOLDSHTEYN, M.I., SUSLOPAROV, G.D.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 349-357

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY PHASE TRANSFORMATION, CARBIDE PHASE, MOLYBDENUM STEEL,
   METAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0338   STEP NO--UR/0126/70/029/002/0349/0357

CIRC ACCESSION NO--AP0129570
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0129570
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF CARBIDE FORMATION
  ASSOCIATED WITH THE DIFFUSION TYPE GAMMA YIELDS ALPHA TRANSFORMATION IN
  STEELS CONTG. VARIOUS QUANTITITES OF MO WAS STUDIED. THE CARBIDE
  FORMATION STARTED IN THE SUPERCOOLED AUSTENITE EVEN BEFORE THE ONSET OF
  THE DIFFUSION TRANSFORMATION. THE GREATER PROPORTION OF THE CARBIDES
  PRECIPITATED DURING THE TRANSFORMATION FROM THE FERRITE FORMED IN THE
  COURSE OF THE LATTER. A LOW STABILITY CARBIDE OF THE (MO, FE) $SUB23$ C
  $SUB6$ TYPE WAS FORMED IN THE SUPERCOOLED AUSTENITE; AS THE TRANSFORMATION
  PROGRESSED, THE STABLER MO $SUB2$ C AND (MO, FE) $SUB6$ C DEVELOPED.

UNCLASSIFIED

Nuclear Physics

(4)

VERNOV, S. N., GRIGOROV, N. L., LIKIN, O. B., LOGAChEV, Yu. I., PISARENKO, N.F.,
SAVENKO, I. A., VOLODIChEV, N. N., and SUSLOV, A. A., Scientific Research
Institute of Nuclear Physics, Moscow State University.

"Studies of Cosmic Radiation Aboard the Prognoz Satellites"

Abstract: Two Prognoz satellites were launched in April and June of 1972 into
orbits with the following parameters: apogee -- 200,000 kilometers, perigee --
950 kilometers, angle of inclination 65°. The satellites were launched toward
the sun, the angles between projections of the apsides and the orbit through
the plane of the ecliptic and the direction of the sun being 22 and 23
degrees, respectively. The angle between projections of the apsides of the
two satellites was 77° in July 1972. The satellites served about six months
each. Although they were in orbit during the decline in the 11-year solar
cycle, their first months of observation coincide with an anomalous increase
in solar activity. Background radiation was almost never recorded in these
months. From April through September 1972, interplanetary space was filled
with intensive streams of solar protons at energies of about 1 Mev. Higher
energy protons were observed only during the August flares. The electron flow
1/3

(4)

USSR

VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, 1973, pp 1138-1143

was well correlated with the protons. Absorbed radiation dose during this interval, except for 2-7 August, was steady at approximately 24 mrad per day.

Calculations from the uniform nature of the declines in intensity of solar proton activity indicate that the absorbing layer is at a distance of approximately two astronomical units from the sun. It is remarkable that the state of interplanetary space remained the same over a long interval, in spite of substantial manifestations of solar activity; when perturbed, it recovered rapidly.

Increases in electron flow were observed several times without any corresponding increase in proton output, but every increase in proton output from the sun was accompanied by an increase in electron flow.

During intervals of low solar activity, the detectors which determined these correlations established a strong negative correlation between the counts of extra-solar protons at over 30 Mev and electrons under 500 kev.

The satellites recorded the intense solar activity of early August. An interesting phenomenon was the sharp increase in the flow of particles at all energies over the course of 2.5 hours early on 5 August. The peaks in the curves had particularly steep leading and trailing edges. It is theorized

2/3

(4)

USSR

VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6,
pp 1138-1143

that this represented a magnetic "trap" with dimensions of approximately 0.1
au, traveling at approximately 2500 kilometers per second; the absence of any
nucleons with $Z \geq 6$ indicates that the particles must all have been of solar
origin.

3/3

TITLE--CLINICO MORPHOLOGICAL PARALLELS IN HAND AND MECHANICAL SUTURES OF
   THE PERIPHERAL NERVES -U-

AUTHOR-(03)-PERMYAKOV, N.K., BOYEV, YU.M., SUSLOV, A.M.

CCUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
   40-44

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NERVOUS SYSTEM, SURGERY, SUTURE, NATURAL FIBER, TANTALUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0916   STEP NO--UR/0481/70/000/003/0040/0044

CIRC ACCESSION NO--AP0126575
                      UNCLASSIFIED

CIRC ACCESSICN NO--AP0126575   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF TWO METHODS OF NERVE
SUTURE, THE MECHANICAL TANTALUM AND THE HAND SILK SUTURES, UNDERTAKEN ON
24 DOGS HAS SHOWN THAT AFTER THE MECHANICAL SUTURE IN 3-6 MONTHS THERE
IS RESTORATICN OF STRUCTURE BOTH OF THE CENTRAL AND OF THE PERIPHERAL
ENDS OF THE NERVE AT THE EXPENSE OF THE INGROWTH OF NEUROFIBRIL FROM THE
CENTRAL INTO THE PERIPHERAL ENDS OF THE NERVE. AFTER HAND SUTURE NO
SUCH RESTORATION OF THE NERVE STRUCTURE IS SEEN AND ONLY THIN, SINGLE
NEUROFIBRILS REACH THE PERIPHERAL END OF THE NERVE, THROUGH THE SUTURE
AREA. CLINICAL DATA SHOW THAT COMPLETE RESTORATION OF NERVES AFTER THE
TANTALUM MECHANICAL SUTURE IS SEEN TWICE AS RAPIDLY AS AFTER THE HAND
SILK SUTURE.   FACILITY: KHIRURGICHESKAYA KLINIKA NR 4 I
PATOLOGCANATCMICHESKOYE OTDELENIYE NAUCHNO-ISSLED. INSTITUTA SKORGY
POMOSHCHI IM. N. V. SKLIFOSOVSKOGO, MOSKVA.

UNCLASSIFIED

USSR   UDC 533.69.01+533.662.013

PROKHOROVICH, P. A., SUSLOV, G. V.

"Application of the Integral Equation Method to the Solution of the Reverse
Boundary Value Problem of Wing Theory"

Uch. zap. Gorkov. un-t. Ser. Mekhanika (Scientific Notes of Gor'kiy University,
Mechanics Series), 1972, Issue 156, No 1, pp 35-39 (from RZh-Mekhanika, No 3,
Mar 73, Abstract No 3B296)

Translation: An integral equation for the unit vector of the normal to the
contour is derived as a function of the polar angle for a symmetric profile
with a given distribution of the velocity modulus along its contour for a
noncirculating flow. The approximate numerical solution technique is considered
that makes it possible to determine the shape of the profile.
Abstractors note: There was an error in deriving the basic integral equation:
in the expression for the length of element of arc in polar coordinates there
is given the factor $\sqrt{1 + [(1/r)(dr\ d\theta)]^2}$. V. I. Putyata.

1/1

USSR

UDC: 621.375.132.3(088.8)(47):621.385.
.032.213.2

SUSLOV, I. A., OBIKHVOSTOV, V. D., Tomsk Institute of Radio Electronics and Electronic Technology)

"A Cathode Follower"

USSR Author's Certificate No 250217, filed 14 Mar 68, published 9 Jan 70 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D155 P)

Translation: To compensate for the effect of parasitic capacitance between the cathode and heater of a tube, an rf choke is connected in one of the conductors of the heater circuit for the tube in this cathode follower, and the other conductor is connected to the cathode through a resistor, and to the ground bus through an inductor and resistor connected in parallel.

1/1

USSR

UDC 621.375.221

SUSLOV, I. A.

"Tubes for Nanosecond Video Amplifiers"

Moscow, Radiotekhnika, Vol 25, No 9, 1970, pp 74-80

Abstract: The author begins his discussion by introducing the equation for the input admittance of a common-cathode stage,

$$Y_{in} = j\omega\, /C_{gk} + C_{gp}(1 + \dot{K})\, /,$$

which is often identified with the admittance of the input capacitance

$$C_{in} = C_{gk} + C_{gp}(1 + K_0).$$

In these equations, K is the transfer factor of the stage, K_0 is its value at average frequencies, and C_{gk} and C_{gp} are the interelectrode capacitances of the tube, assumed to be a triode. On the basis of the second equation, it is believed that triodes are unsuitable for broad-band amplifiers. The author points out, however, that the replacement of K by K_0 results in inaccuracies in the determination of the input admittance since the effect of

1/2

USSR

SUSLOV, I. A., Radiotekhnika, Vol 25, No 9, 1970, pp 74-80

the admittance active component and the frequency dependence of the dynamic input capacitance are not taken into account; the physical picture of the processes in the amplifier is distorted since, by considering the transient in the input circuit, it is assumed that it has come to an end in the following stage. He investigates the effect of the transfer capacitance on triode amplifier characteristics without these simplifications, considers two-stage resistance coupled amplifiers, triode amplifiers with parallel feedback, and other triodes, and comes to the conclusion that the triode is actually the best tube for broad-band amplifiers, especially for amplifiers of pulses with nanosecond rise times.

2/2

USSR   UDC   621.317.7.029.65/66-5

VERTIN, A. A., PETRUSHIN, A. A., SUSLOV, N. N., SHESTOPALOV, V. P.,
KOLOSOV, S. S., LEONOV, Yu. I., and LITVINENKO, L. N.

"Automation of Experimental Research in the Millimeter and Sub-
millimeter Wavelength Ranges"

Translation: The proposed research method is based on the visuali-
zation of the field distribution in open structures (resonators,
for example) by introducing into their space a test body which,
entering a region of greater or lesser intensity in its motion
along a specified trajectory, varies to some extent the parameters
of the structures. The trajectory of the test body is traced by a
beam on the screen of a cathode-ray tube. The brightness of the
beam is proportional to the signal taken from the open structure.
A. K.
1/1

- 144 -

USSR   UDC 621.396.668

ZHODZISHSKIY, M. I., SUKHAREV, A. D., SUSLOV, N. M., KURBATOV, A. V., ANTSIBOR, N. M.

"Obtaining a Stable, Smoothly Tunable Frequency Using a System With Phase Type Automatic Frequency Control With a Mixer and a Phase Detector in the Form of a Coincidence Stage"

Translation: The authors analyze and experimentally study a system with phase type automatic frequency control with a converter in the feedback loop and using a pulsed phase detector in the form of a coincidence stage. Oscillations in the controlled generator with the frequency f_p are compared in the converter with the fixed frequency f_0 of the reference oscillation. In steady-state operation, the oscillation frequency at the converter output is usually equal to the frequency F of the tunable generator oscillation: $f_p = f_0 \pm F$. Voltage from the phase detector output, after 1/2

- 14 -

USSR

ZHODZISHSKIY, M. I., et al, Tr. Mosk. aviats. in-ta, 1969,
Vol 188, pp 39-62

filtration by a low-frequency filter, tunes the controlled
generator. Automatic frequency control makes it possible to
obtain the combination f_0 and F at a low level of parasitic
components in the output oscillation spectrum. If special
measures are not taken, then it is possible that the controlled
generator be tuned to a mirror frequency or to a $f_0 \pm \frac{m}{n} F$ type
frequency. Methods are proposed for avoiding mirror tuning and
for combatting the effect of high-frequency components at the
converter output. Original article: 6 bibliographic entries.
N.S.

2/2

USSR

UDC: 621.314.26

SUSLOV, N. Ye.

"Spectral Analysis of Passive Frequency Converters"

Translation: A method of spectral analysis of passive diode frequency converters, based on the use of exponential approximation of the volt-ampere characteristics of the diode p-n junction, is given. An examination is made of the technique of spectral analysis of various converter circuits: single-ended balanced and unbalanced, ring type, and double-ended odd-balanced converters. Bibliography of three. N. S.

1/1

USSR

UDC 532.526.011.55.011.6

SUSLOV, O. N., Moscow

"Multicomponent Diffusion and Heat Exchange on Flow of a Chemically Equilibrium
Ionized Gas Around a Body"

Moscow, Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 3, 1972, pp 53-
59

Abstract: A study was made of the flow of a multicomponent partially ionized
gas mixture in the chemically equilibrium boundary layer near an impenetrable
surface. The flow of partially ionized air around a sphere was considered as
an example. The chemical composition at each point of the boundary layer was
found by the dynamic values of the pressure, temperature and concentrations of
the chemical elements by Newton's method in parallel with integration of the
basic system of nonself-similar differential equations. Another more economical
method of finding the composition in the sense of expenditure of machine time is
discussed. It is found that the dimensionless thermal flux to the walls at the
forward critical point of the sphere with constant concentrations of the chemi-
cal elements can be 26% higher than for variable concentrations. This paper is
a continuation of a previous paper [O. N. Suslov, et al., Zhurnal Prikladnoy
mekhaniki i tekhnicheskoy fiziki, No 1, 1971] in which the basic system of
Navier-Stokes and Prandtl equations is reduced by exclusion of the electric
1/3

field arising as a result of separation of the charged components with different diffusion properties to a form analogous to the corresponding system for chemically reactive mixtures of neutral components for the case of chemically equilibrium flows of ionized mixtures without external electromagnetic fields.

In contrast to the case of flow of dissociated air around a sphere where the concentration of the chemical element oxygen on the wall can be greater than at the outer limit of the boundary layer, in the case of partially ionized air, an excess concentration of the chemical element nitrogen is formed on the surface of the body. This is explained by the fact that under the investigated conditions, a larger percentage of nitrogen atoms are ionized than oxygen on the outer limit of the boundary layer. The approximation formulas are obtained for the critical point of the body for a dimensionless thermal flux as a function of the enthalpy drop and the parameter ℓ/σ_{eff} across the boundary layer

(σ_{eff} is the effective Prandtl number, $\ell = \mu\rho/\mu_w\rho_w$, μ is the viscosity of the mixture, ρ is the density of the mixture, and the subscript w denotes the surface of the body). In the case of ionization, the dimensionless heat flux in the frozen boundary layer can be 1.4 times greater than in the equilibrium boundary layer. The ratio of the thermal fluxes on the side surface and at

2/3   - 8 -

USSR

SUSLOV, O. N., Zhurnal Prikladnoy mekhaniki tekhnicheskoy fiziki, No 3, 1972, pp 53-59

the critical point of the sphere to an angle of 80° with accuracy to 5-10% turned out to be equal to the ratio of these values calculated previously [Kemp, et al., Gazodinamika i teploobmen pri nalichii khimicheskikh reaktsiy, Moscow, Foreign Literature Press, 1962] for dissociated air on the basis of the hypothesis of local similarity and other simplifying assumptions. This is explained by the mutual compensation of certain terms entering into this relation. For angles of greater than 85°, the deviation from the previously published data with respect to thermal fluxes is 25-30%.

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USSR   UDC 616.891-072.8+616.891-07:616.154.452/.453

KARVASARSKIY, B. D., IOVLEV, B. V., KALININ, O. M., STABROVSKIY, Ye. M.,
SUSLOV, V. I., and TARABRINA, N. V., Department of Neuroses and Psycho-
therapy, Leningrad Scientific Research Psychoneurological Institute imeni
V. M. Bekhterev

"Connection Between Experimental Psychological Characteristics of the
Personality and Biochemical Indexes in Relation to Problems of the Study
of Psychic Stress in Neurotics"

Abstract: Correlations between psychological data obtained from various tests
(MMPI, frustration method of Rozenzweig, Eysenck questionnaire, and others)
and biochemical data (blood tests for 11-hydroxycorticosteroids, serotonin,
protein-bound iodine; urine tests for dopamine, noradrenalin, adrenalin,
vanillylmandelic acid and others) were established. These relationships were
determined for 48 neurotics before applied stress, and for a control group of
healthy persons. The relationships were arrived at by the method of regres-
sion analysis using a computer.
1/2

SSR

KARVASARSKIY, B. D., et al., Zhurnal Nevropatologii i Psikhiatrii, 1971, Vol 71, No 8, pp 1199-1203

It is clear from the results that regression analysis is valuable 'n forecasting the effects of stress on neurotics, which in turn makes it potentially valuable in studying the pathogenesis and therapy of neuroses.

2/2

USSR

UDC 624.07:534.1

SUSLOV, V. P., KOROSTYLEV, L. I.

"Stability of the Walls of Beams With Reinforced and Unreinforced Cuts"

V sb. Kratk. tezisy dokl. k Konf. po povrezhdeniyam i ekspluat. nadezhnosti sudovykh konstruktsiy, 1972 (Brief Subjects of Papers at the Conference on Failure and Operational Reliability of Ship Designs, 1972 -- Collection of Works), Vladivostok, 1972, pp 104-108 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V321)

Translation: Semiempirical formulas are obtained on the basis of theoretical and experimental data for determining critical loads of the walls of beams with a centrally located opening, the height of which is not more than half the height of the beam. 7 ref. N. A. Kulakov.

1/1

USSR

SUSLOV, V. P., TELEGINA, I. A.

"Method of Calculating Decks with Several Cross Couplings, Considering Shear and Flat Stressed State"

Translation: A double deck is calculated, consisting of a large number of beams in the main direction and several cross couplings. The nature of fastening of the deck around the contour and the external load are arbitrary. The problem is solved using the idea of the method of selecting the load on the cross couplings, as well as the dependence between bending moment and deck bend. Calculation is reduced to solution of algebraic equations produced from the condition of equality of bending of the beams in the two directions. 7 Biblio. Refs.

1/1

TITLE--REGIONAL HYPOTHERMIA OF THE TRUE PELVIS IN THE OPERATIVE TREATMENT
  OF PROSTATIC ADENOMA -U-

AUTHOR-(03)-OVNATANYAN, K.T., SUSLOV, V.V., GLUKHOVA, K.Z.

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA, I NEFROLOGIYA, 1970, NR 2, PP 60-63

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPOTHERMIA, SURGERY, ARTERY, GANGLIONIC BLOCKING AGENT,
  TUMOR, UROLOGY, REPRODUCTIVE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1723   STEP NO--UR/0606/70/000/002/0060/0063

CIRC ACCESSION NO--AP0101776
                        UNCLASSIFIED

2/2   026
CIRC ACCESSION NO--AP0101776
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS EMPLOYED LIGATION OF INTERNAL ILIAC ARTERIES (56 OPERATIONS), CONTROLLED HYPOTENSION WITH THE AID OF GANGLIONIC BLOCK (120 OPERATIONS) AND REGIONAL HYPOTERMIA OF THE TRUE PELVIS CAVITY (75 OPERATIONS) TO REDUCE BLOOD LOSSES IN ADENOMECTOMY. THE LASTLY NAMED METHOD CONSISTS IN CONCURRENT COOLING OF THE SUPRAPUBIC REGION, URINARY BLADDER AND PROSTATE, VIA THE RECTUM. THE COOLING MEDIUM TEMPERATURE WAS 0-3DEGREES. THE COOLING TIME VARIED FROM 20 TO 35 MINUTES. THE AVERAGE TEMPERATURE OF THE PROSTATE REGION WAS 22DEGREES. IN A SINGLE STAGE ADENMECTOMY PERFORMED AGAINST THE BACKGROUND OF LOCAL COOLING THE AVERAGE BLOOD LOSS AMOUNTED TO 90 ML. THE MERITS OF THE METHOD INCLUDE ITS TECHNICAL SIMPLICITY, ACCESSIBILITY AND SAFETY.

1/2   018   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--RELATIVISTIC EVALUATION OF THE EXCHANGE EFFECT IN ELECTRON CAPTURE
-U-
AUTHOR--SUSLOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 97-100

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHARGE EXCHANGE, ELECTRON CAPTURE, RELATIVISTIC PARTICLE,
HARTREE FOCK METHOD, ATOMIC MASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/2002   STEP NO--UR/0048/70/034/001/0097/0100

CIRC ACCESSION NO--AP0105076
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0105076

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE RELATIVISTIC ESTNS. OF THE
EXCHANGE AND OVERLAPING EFFECTS OCCURING BY K SUBNEGATIVE, L SUB1
NEGATIVE AND M SUB1 NEGATIVE CAPTURE WERE DETD. FOR 14 SMALLER THAN OR
EQUAL TO Z SMALLER THAN OR EQUAL TO 98. THESE EFFECTS WERE ONLY
SLIGHTLY DEPENDENT ON THE SELECTION OF THE AT. POTENTIAL. THE CALCNS.
WERE CARRIED OUT WITH THE HARTREE FOCK SLATER POTENTIAL WITH ACCOUNT OF
THE FINAL DIMENSIONS OF THE NUCLEUS.   FACILITY: LENINGRAD. GOS.
UNIV.; LENINGRAD, USSR.

UNCLASSIFIED

1/2   014   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--NEW VALUES OF BRANCHING RATIOS K-BETA PRIME POSITIVE -U-

AUTHOR-(02)-ZYRYANOVA, L.N., SUSLOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 101-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--POSITRON, BETA DECAY, ELECTRON CAPTURE, ATOMIC MASS, ELECTRON
   STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/2001   STEP NO--UR/0048/70/034/001/0101/0105

CIRC ACCESSION NO--AP0105075
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0105075
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFFS. K-BETA PRIME POSITIVE
WERE CALCD. WITHOUT CONSIDERATION OF THE OVERLAPPING AND EXCHANGE
EFFECTS FOR W SUBO EQUALS 10-2600 KEV AND Z EQUALS 5-100. THE DETD.
VALUES WERE COMPARED WITH THE ANALOGOUS DATA OF OTHER AUTHORS; THE
PRESENTED DATA DIFFER BY 1.5-12PERCENT FROM THOSE PRESENTED BY OTHERS.

UNCLASSIFIED

1/2   008   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ZINC FLUORIDE -U-

AUTHOR-(03)-LOPATKINA, G.A., KOLOSOVA, T.N., SUSLOVA, O.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,091
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(10)
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ZINC FLUORIDE, CHEMICAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1466   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126997
                    UNCLASSIFIED

CIRC ACCESSION NO--AA0126997
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT.   ZN FLUORIDE IS PREPD. FROM ZNO AND
    A IS GREATER THAN OF EQUAL TO 30PERCENT EXCESS OF FLUORIDE,BIFLUORIDE
    WITH HEATING UP TO 300DEGREES AT A RATE NOT EXCEEDING 1.2DEGRESS-MIN.

UNCLASSIFIED

Biophysics

USSR

SUSLOVA, T. B., OLENEV, V. I., LORCHAGINA, M. V., and VLADIMIROV, Yu. A.,
Second Moscow Medical Institute imeni N. I. Pirogov

"Chemiluminescence Associated with the Formation of Lipid Peroxides in
Biological Membranes. IV. Role of the Change in Iron Valence in These Processes"

Moscow, Biofizika, Vol 15, No 4, Jul/Aug 70, pp 622-628

Abstract: In earlier studies it was shown that a suspension of mitochondria in
the presence of iron ions develops luminescence as a result of the peroxidation
of lipids. Experiments are described which indicate that mitochondria in sus-
pension accumulate and partly reduce $FeCl_3$ or a complex of Fe^{3+} + ADP when added
to an incubation mixture. Catalytic agents (ortho- and pyrophosphates) increased
the latent period and intensity of luminescence of the suspensions by accelerat-
ing the oxidation of Fe^{2+} with air. In the absence of phosphates, oxygen was
utilized very slowly. The systems that reduce the oxidize iron, e.g., phos-
phates, probably also regulate the processes of peroxide oxidation of lipids in
cells.

1/1

1/3   030   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--GROUP AFFECTION OF THE EYE BY COAL TAR -U-

AUTHOR--SUSOROV, N.A.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO MEDITSINSKIY ZHURNAL, NO 3, 1970, P 75

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, TOXICITY, COAL TAR, SKIN DISEASE, RESPIRATORY
  SYSTEM, DIGESTIVE SYSTEM, BLOOD CIRCULATION, INDUSTRIAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0301   STEP NO--UR/0177/70/000/003/0075/0075

CIRC ACCESSION NO--AP0134147
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0134149
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE LITERATURE AFFECTION OF THE
EYES BY TAR IS KNOWN AS TAR OPHTHALMIA (L. P. GENIS, 1930; A. F.
SAVCHENKO, 1960) OR ACUTE CONJUNCTIVITIS (K. K. VROCHINSKIY, 1961). THE
DISEASES ARISES MOST OFTEN ACCIDENTALLY AND HAS AN ACUTE CHARACTER (K.
K. VROCHINSKIY, 1961; A. F. SAVCHENKO, 1960). YA. A. KHALEMIN (1961)
REPORTED ON THE OCCURRENCE OF TAR PHOTODERMATITES IN PERSONS WHO HAD
WORKED A LONG TIME WITH THAT SUBSTANCE. IN A NUMBER OF CASES, SIDE BY
SIDE WITH OPHTHALMIA, GENERAL POISONINGS ALSO HAVE BEEN OBSERVED, WITH
AFFECTION OF THE SKIN, UPPER RESPIRATORY TRACTS, AND ORGANS OF THE BLOOD
CIRCULATION AND DIGESTION (N. A. LEV ET AL, 1966). IN MAY 1966 WE
OBSERVED 36 PERSONS IN WHOM AFFECTION OF THE ORGANUM VISUS, UPPER
RESPIRATORY TRACTS AND SKIN OF UNCOVERED PARTS OF THE BODY AROSE IN WORK
WITH COAL TAR AS A RESULT OF GROSS VIOLATION OF SAFETY ENGINEERING
RULES. THE PATIENTS WERE MEN 19-23 YEARS OLD WHO HAD WORKED UNDER
VARIOUS CONDITIONS. THEY FORMED TWO GROUPS OF 18 MEN EACH. THE FIRST
GROUP LOADED TAR FROM CARS AT NIGHT FOR FIVE HOURS WITHOUT SPECIAL
CLOTHING OR MEANS OF PROTECTION, THE SECOND PERFORMED THE SAME WORK BY
DAY IN SUNNY WEATHER FOR FOUR HOURS WEARING ORDINARY SUNGLASSES AND TWO
PLAY GAUZE MASKS. TO PREVENT RECURRENT VIOLATIONS OF THE SAFETY RULES,
CONVERSATIONS WERE HELD IN ALL PODRAZDELENIYA OF THE CHAST' ON THE
EFFECT OF TAR ON THE HUMAN ORGANISM AND MEASURES OF PROTECTION AGAINST
IT; THE TAR IS UNLOADED ONLY AFTER BEING WETTED WITH WATER IN CANVAS
COVERALLS WITH HOODS, GAUNTLETS, HERMETIC GOGGLES WITH RESPIRATORS AND
ONLY AT NIGHT.

UNCLASSIFIED

3/3   036   UNCLASSIFIED   PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0134149
ABSTRACT/EXTRACT--AFTER THOSE MEASURES WERE ADOPTED NO CASES OF AFFECTION
 OF THE ORGANUM VISUS WITH TAR WERE OBSERVED.

UNCLASSIFIED

USSR

UDC 615.381.011.3:532.13

KAVESHNIKOV, A. I., SETT, A. V., URATKOV, Ye. F., ORLOV, Ye. S.,
STRUCHKOVA, K. I., POLUSHINA, T. V., and SUSOVA, G. M.,
Department of Experimental Traumatology and Orthopedics, Central
Institute of Traumatology and Orthopedics, Ministry of Health
USSR, and Laboratory of Blood Substitutes and Fractionation of
Blood Proteins, Central Institute of Hematology and Blood
Transfusion, Moscow

"Changes in the Viscosity of Blood After Dilution with Different
Blood Substitutes Under Hypothermia Conditions"

Abstract: Changes in the viscosity of blood were studied after
dilution at different temperatures with the following solutions:
Ringer Locke, glucose, polyglucine [form of dextran],
rheopolyglucine, low-molecular weight dextran, and polyvinyl-
pyrrolidone. The tabulated results can be used as a basis for
selecting a blood substitute and degree of blood dilution in

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USSR

KAVESHNIKOV, A. I., et al., Patologicheskaya Fiziologiya i
Eksperimental'naya Terapiya, No 1, 1971, pp 70-75

relation to perfusion temperature. A mathematical formula is
proposed for calculating the viscosity of the solution in blood
dilution in relation to the hematocrit index, temperature and
viscosity of the blood substitute. It is concluded that in case
of normothermal perfusion or slight chilling, any of the solu-
tions studied can be used. But under low-temperature conditions,
when water moves from the interstitial and intracellular spaces,
it is preferable to use rheopolyglucine, low-molecular-weight
dextran, or low-molecular-weight polyvinylpyrrolidone because
they decrease the viscosity of the perfusate more than the others.

2/2

1/2   010
UNCLASSIFIED
TITLE--EVALUATING THE STABILITY OF POLYMER DISPERSIONS -U-   PROCESSING DATE--23OCT70

AUTHOR-(03)-VERKHOLANTSEV, V.V., SUTAREVA, L.V., SMIRNOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (1), 20-1

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--RUBBER CHEMICAL, LATEX, CALCULATION, CHEMICAL
    STABILITY/(U)OP10 LATEX EMULSIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0428

STEP NO--UR/0303/70/000/001/0020/0021

CIRC ACCESSION NO--AP0119364
UNCLASSIFIED

CIRC ACCESSION NO--AP0119364
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS USED FOR THE
EVALUATION OF OP-10 LATEX EMULSIFIER STABILITY VIZ., (A) BY CALCG. THE
HEIGHT OF THE POTENTIAL BARRIER (U) FROM CURVES PLOTTED FOR THE
POTENTIAL ENERGY OF PARTICLE INTERACTION VS. DISTANCE BETWEEN THE
PARTICLES, AND (B) BY MEASURING THE CRIT. DISTANCE BETWEEN THE PARTICLES
DURING DESTABILIZATION, WERE CRIT. EXAMD. A PLOT OF U EQUALS F(DELTA)
(WHERE DELTA EQUALS DELTA SUBO MINUS DELTA SUBCR-DELTA SUBO AND DELTA
SUBO AND DELTA SUBCR ARE THE CALCD. AND THE CRIT. THICKNESS OF A LIQ.
INTERLAYER) IN THE RANGE UNDER STUDY GAVE A CRUVE WHICH WAS EXTRAPOLATED
TO DELTA EQUALS 0 WHEN U EQUALS 0 AND CORRESPONDED TO AN UNSTABLE SOL.
THE CORRELATION BETWEEN U AND DELTA PERMITTED THE CALCN. OF U BY
INTERPOLATION (FROM THE EXPTL. DETD. SOL CONCN. CORRESPONDING TO ITS
COAGULATION).

UNCLASSIFIED

SUSTAVOV, Yu. V.

Oceanography

UDC 551.46.08:627.915

POSSIBILITY OF UTILIZING MODERN SELF-CONTAINED BUOY STATIONS FOR OCEANOGRAPHIC RESEARCH IN STRONG CURRENT AREAS

[Article by Candidate of Technical Sciences A. S. Gotskiy, A. I. Glukharev, Yu. V. Sustavov, Candidate of Geographic Sciences Yu. V. Sustavov, Candidate of Geographic Sciences; Moscow, Meteorologiya i Gidrologiya, Russian, No 11, 1972, submitted 13 June 1972, pp 65-74]

The results are discussed from calculations and simulation testing to determine the hydrodynamic and weight loads experienced by self-contained buoy stations in deep-water strong current zones of the ocean. The flow velocities were established at which it is possible to install GM-51 and BS-6000 buoy stations. Recommendations are made with respect to the development of self-contained buoy stations for strong-current areas.

Beginning in 1960, the method of measuring currents by installing self-graphic operations of the institutions of the practice of oceano-the initial step, the buoy stations were assembled from nonstandard equipment. In using backward BS-720 type buoys (lifting capacity 65h kg with a mass of 617 kg) and "pinch" type buoys (lifting capacity 2,000 kg with a mass of 1,500 kg) or homemade buoys made of metal and foam plastic with a lifting capacity of 1,000 1,500 kg.

In the middle of the 1960's, a definite amount of experience had already been accumulated which permitted the development and gradual introduction of more modern designs of self-contained buoy stations into practice (GM-46, GM-47, GM-49, GM-50, and GM-51). These buoys were designed for taking oceanographic measurements in areas with different depths. Procedural instructions with respect to working with the self-contained buoy stations were published simul-taneously. The measurements of the oceanological characteristics on the self-contained buoy stations permitted broad information to be obtained on the cur-rents which contributed greatly to the precision of definition of our concepts of the dynamic processes taking place in the oceans and seas.

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USSR

UDC 615.917

SUTKAYTIS, YU. A.

"State of the Estrous Cycle in Rats Subjected to Polychloropinene"

V sb. Vopr. epidemiol. i gigiyeny v LitSSR (Problems of Epidemiology and Hygiene in the Lithuanian SSR — collection of works), Vil'nus, 1971, pp 152-155 (from RZh-Farmakologiya. Khimiterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.761)

Translation: In rats ♀♀ injected intraperitoneally with polychloropinene (I) in a dose of 9.1 mg/kg (1/50 DL_{50}) for one month, the duration of the estrus stage was on the average 10.5 days (11.9 days in the control group); on injection of I for two months, the estrus stage was reduced to 9.5 days, and the diestrus phase increased to 19.9 days (18 days in the control group); on injection of I in the same dose for 4 months, the estrus stage was 5 days with 10.7 days in the control group. Analogous (the most expressed with 2-4 months of poisoning) changes in the cycle frequency and duration of the estrus stage were observed on intraperitoneal injection of I in a dose of 0.57 mg/kg (1/800 DL_{50}). USSR, Vil'nus, Scientific Research Institute of Epidemiology, Microbiology and Hygiene.
1/1

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UNCLASSIFIED
PROCESSING DATE—30OCT70
TITLE—THE EFFECT OF THYMECTOMY IN GUINEA PIGS ON URINARY EXCRETION OF
17,OXYCORTICOSTEROIDS UNDER NORMAL CONDITIONS AND IN STRESS -U-
AUTHOR-(02)-MALYZHEV, V.A., SUTKOVOY, D.A.

CCUNTRY OF INFO—USSR

SOURCE—PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
   VOL 14, NR 3, PP 31-34
DATE PUBLISHED————70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TCPIC TAGS—THYMUS GLAND, SURGERY, URINE, EXCRETION, CORTICOSTEROIDS,
   ADRENAL CORTEX

CCNTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—3001/1925
STEP NO—UR/0396/70/014/003/0031/0034

CIRC ACCESSION NO—AP0127326
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE—30OCT70

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. AS SHOWN, IN GUINEA PIGS THYMECTOMIZED AT IMMATURE AGE, URINARY EXCRETION OF 17,OXYCORTICOSTEROIDS WAS ALMOST HALVED FOUR MONTHS AFTER THE OPERATION IN COMPARISON WITH INTACT ANIMALS. A MORE PROLONGED THAN NORMAL ACTIVATION OF ADRENAL CORTEX WAS SEEN BOTH AT THE EARLY AND AT THE LATE PERIODS AFTER THYMECTOMY, WHEN THESE ANIMALS WERE SUBJECTED TO THE ACTION OF UNFAVOURABLE FACTORS, SUCH AS OPERATION OR INFLAMMATION.
   FACILITY: LABORATORIYA IMMUNOKHIMII GORMONOV I LABORATORIYA. FACILITY: PATOFIZIOLOGII KIYEVSKOGO INSTITUTA ENDOKRINOLOGII I OBMEAN VESHCHESTV.

UNCLASSIFIED

USSR

MOROKHOVETS, M. A., SOKOLOV, Ye. B., and SUTOCHNIKOV, G. A., Moscow Institute of Fine Chemical Technology, Chair of Semiconductor Materials Technology

"Characteristics of Magnesium Behavior in Tin Crystallization"

Abstract: A study was made of the distribution of magnesium on the ingot after directional crystallization and of solid solutions of Sn containing Mg the initial materials were OVCh-000 tin containing 99.995% of the basic substance and magnesium obtained by chemical purification of MG-1 magnesium and containing not more than 0.001% impurities. The investigation results are discussed by reference to curves showing the dependences of Mg concentration on the crystallized part of the specimen (crystallization rate 0.15 mm/min) and the part of wt. of the ingot for two crystals (crystallization rate 0.045 mm/min). Except their first part, the curves show an impurity distribution by directional crystallization which is characteristic for a distribution coefficient K<1 of Mg in Sn. The actual distribution coefficient of Mg was found to be of the order of 0.03-0.04. Three illustr., four biblio. refs.

1/1

USSR

UDC 541.182.2/.3

SUTUGIN, A. G., KOTTSEV, E. I., and FUKS, N. A., Physicochemical Institute
imeni L. Ya. Karpov, Moscow

"Formation of Condensation Highly-Dispersed Uncoagulated Aerosols"

Abstract: The authors made an experimental study of aerosol formation during
the condensation of silver vapors with a low concentration under conditions
corresponding to those used in calculations previously performed by them.
The aerosol generator resembled the instrument of HIGUCHI and O'KONSKI. It
was found that monodisperse aerosols with a low particle number concentration
$(5 \cdot 10^1 - 3 \cdot 10^8$ cm$^{-3})$ are formed. It is suggested that the formation of such
aerosols is due to heterogeneous condensation on the impurity nuclei, as
well as the assumed existence of a relationship between the efficiency of
the collisions of molecular aggregates with   each other and with the vapor
molecules and the size of these aggregates. An EVTsMM-220 was used for the
calculations.

1/1

Aerosols

USSR

UDC 542.953+541.18.047

SUTUGIN, A. G., Physico-Chemical Institute imeni L. Ya. Karpov, Moscow

"Effect of Non-Lapping Molecular Forces on Coagulation and Condensation Growth of Highly Dispersed Aerosols"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 3, 71, pp 647-650

Abstract: As is known, coagulation is a basic factor in determining the size-distribution of particles within those aerosols which form during the condensation of metal vapors, in the process of high-speed cooling of a vapor-gas mixture. Nevertheless, the corresponding calculations are quite difficult, requiring exact knowledge of the coagulation constants. The author summarizes mathematically the entire problem of coagulation calculations, presenting assumptions, formulas, and applications to specific situations. Effect of molecular interaction is stressed. Sample calculations and graphs are included.

1/1

UNCLASSIFIED

TITLE--FORMATION OF CONDENSATION AEROSOLS UNDER RAPIDLY CHANGING
ENVIRONMENTAL CONDITIONS -U-

PROCESSING DATE--02OCT70

AUTHOR-(02)-SUTUGIN, A.G., FUKS, N.A.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 225-260

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AEROSOL, DIFFERENTIAL EQUATION, PARTICLE SIZE, CONDENSATION
REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1438

STEP NO--UR/0069/70/032/002/0255/0260

CIRC ACCESSION NO--AP0109498

UNCLASSIFIED

CIRC ACCESSION NO--AP0109498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD FOR CALCULATING VAPOR
CONDENSATION IS PRESENTED. THE METHOD IS BASED ON NUMERICAL SOLUTION
OF DIFFERENTIAL EQUATIONS DESCRIBING THE TIME VARIATION OF SUBCRITICAL
AND NEAR CRITICAL MOLECULAR CLUSTERS CONCENTRATIONS AS WELL AS THE
VARIATION IN THE SIZE OF SUPERCRITICAL PARTICLES, ALLOWING FOR THE
CHANGE IN ENVIRONMENTAL CONDITIONS. THE SUGGESTED METHOD IS APPLICABLE
FOR CALCULATING THE CONDENSATION OF ASSOCIATED GASES AND TAKES INTO
ACCOUNT THE COAGULATION OF GROWING PARTICLES. THE AEROSOL FORMATION IN
THE CASE OF DILUTION OF HOT GAS JETS CONTAINING SILVER VAPORS WITH COLD
AIR HAS BEEN CALCULATED BY MEANS OF A COMPUTER AND THIS PROCESS HAS BEEN
SHOWN TO PROCEED BY THE COAGULATION MECHANISM.

UNCLASSIFIED

USSR   UDC: 541.182.2/3

SUTUGIN, A. G., and FUKS, N. A., Scientific Research Physicochemical
Institute Imeni L. YA. Karpov, Moscow, State Committee for Chemistry

"Formation of Condensation Aerosols Under Rapidly Changing External Con-
ditions. Theory and Method of Calculation"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 2, Mar-Apr 70, pp 255-260

Abstract: The article describes a method for calculating a macroscopic
pattern of aerosol formation which includes the simultaneously occurring
processes of nucleation, condensation growth of particles and coagulation.
The method is suitable under arbitrarily rapid changes in external condi-
tions. The general scheme of calculation is as follows: For a certain
time segment there is integration of the system of nonlinear differential
equations

$$\frac{df_1}{dt} = - \sum_{g=1}^{\infty} a_g K_{1g}(T) f_1 f_g + \sum_{g=1}^{\infty} \beta_g f_g$$

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USSR

$$\frac{df_g}{dt} = -\sum_{i=1}^{\infty} a_{gi} K_{ig}(T) f_g f_i + \sum_{j+k=g} a_{jk} K_{jk}(T) f_j f_i + \beta_{g+1} f_{g+1} - \gamma_g f_g$$

and equations describing changes in external conditions. It is assumed that at the initial moment the concentrations of molecular aggregates are equal to equilibrium concentrations for the temperature and concentration existing at this moment. By the time a significant number of supercritical particles are formed, the calculation program is replaced by a new program containing g + n equations of form (2) and a certain number of equations of the form

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USSR

SUTUGIN, A. G., and FUKS, N. A., Kolloidnyy Zhurnal, Vol 32, No 2, Mar-Apr 70, pp 255-260

$$dg/dt = \sum_{i=1}^{K} a_{ig} K_{ig} f_i$$

$$df_k/dt = - \sum_{k>g} K_{gk} f_g f_k$$

which describe changes in the concentration and size of particles in an isolated group. The number n can be 10-30, for example. Following completion of the first stage of calculation the distribution spectrum of supercritical particles containing more than g + n' molecules (n'< n) is partitioned into several groups or is replaced by one group of particles with averaged mass and concentration equal to the sum of concentrations of supercritical particles. But instead of concentrations of particles containing from g + n' to g + n molecules, zeroes are sent. After several integration steps a new portion of such supercritical particles is formed, their size averaged, concentration summed and one equation each of form (4) and (5) added to the system.

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USSR

SUTUGIN, A. G., and FUKS, N. A., Kolloidnyy Zhurnal, Vol 32, No 2, Mar-
Apr 70, pp 255-260

The suggested method was used to calculate aerosol formation in
the condensation of silver vapors in an argon or helium jet escaping into
cold air. A system of 126 differential equations of form (1)-(2) was
numerically integrated by the Runge-Kutta method with the aid of an M-220
digital computer. The results indicate the existence of a threshold vapor
concentration below which aerosol formation by spontaneous condensation
is impossible. Aerosol formation from dilute vapors of low-volatile sub-
stances proceeds by the coagulation mechanism.

4/4

TITLE--PHASE TRANSFORMATIONS OF TITANIUM AND ZIRCONIUM IN SHOCK WAVES -U-

UNCLASSIFIED

PROCESSING DATE--18SEP70

AUTHOR-(04)-GERMAN, V.N., BAKANOVA, A.A., TARASOVA, L.A., SUTULOV, YU.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2) 637-89

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ALLOY PHASE TRANSFORMATION, TITANIUM, ZIRCONIUM, SHOCK WAVE, X RAY DIFFRACTION, HIGH PRESSURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0137

STEP NO--UR/0181/70/012/002/0637/0639

CIRC ACCESSION NO--AP0054933

UNCLASSIFIED

CIRC ACCESSION NO--AP0054933   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TI AND ZR SPECIMENS WERE INVESTIGATED AFTER A BRIEF IMPULSE LOADING WITH THE AID OF SHOCK WAVES OF AMPLITUDE 120, 200, 350, AND 500 KILOBARS. AFTER SHOCK TREATMENT, THE SPECIMENS WERE ANALYZED BY X RAY DIFFRACTION. IN ALL ZR SPECIMENS AT ALL AMPLITUDES OF SHOCK PRESSURE, LINES OF A NEW PHASE WERE OBSD. THE MAX. AMT. OF THE NEW PHASE, EXCEEDING THE AMT. OF INITIAL PHASE, WAS OBTAINED AT A PRESSURE OF 350 KILOBARS. THE NEW PHASE IS BCC. WITH ALPHA EQUALS 3.568 ANGSTROM AND D. EQUALS 6.656. FOR TI, THE NEW PHASE WAS OBTAINED AT A PRESSURE OF 350 KILOBARS. IT IS CUBIC WITH ALPHA EQUALS 3.27 ANGSTROM.

UNCLASSIFIED

1/2 032

UNCLASSIFIED

TITLE--REACTION OF CARBOXYL CONTAINING RUBBERS WITH DIISOCYANATES -U-

PROCESSING DATE--23OCT70

AUTHOR-(04)-PROKHOROV, L.I., SUTYRINA, G.A., KHROMOVA, N.S., PAVLOV, S.A.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 7-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBOXYLATE RUBBER, ISOCYANATE, TENSILE STRENGTH, MATERIAL DEFORMATION, POLYMER CROSSLINKING
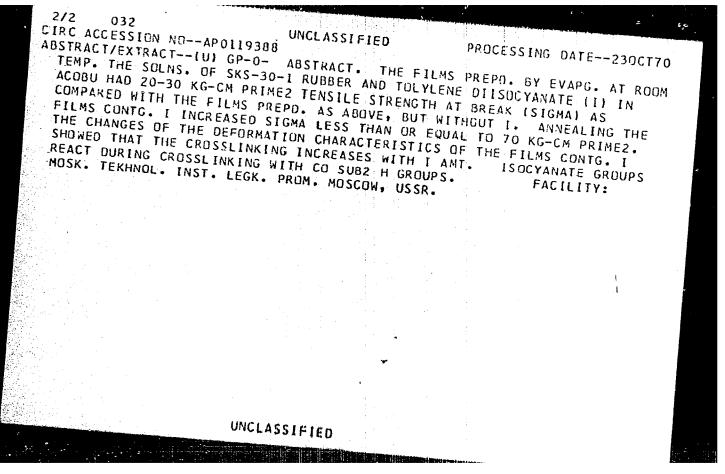
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0452

STEP NO--UR/0138/70/029/003/0007/0009

CIRC ACCESSION NO--AP0119388

UNCLASSIFIED

CIRC ACCESSION NO--AP0119388   UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FILMS PREPD. BY EVAPG. AT ROOM TEMP. THE SOLNS. OF SKS-30-1 RUBBER AND TOLYLENE DIISOCYANATE (I) IN ACOBU HAD 20-30 KG-CM PRIME2 TENSILE STRENGTH AT BREAK (SIGMA) AS COMPARED WITH THE FILMS PREPD. AS ABOVE, BUT WITHOUT I. ANNEALING THE FILMS CONTG. I INCREASED SIGMA LESS THAN OR EQUAL TO 70 KG-CM PRIME2. THE CHANGES OF THE DEFORMATION CHARACTERISTICS OF THE FILMS CONTG. I SHOWED THAT THE CROSSLINKING INCREASES WITH I AMT. ISOCYANATE GROUPS REACT DURING CROSSLINKING WITH CO SUB2 H GROUPS. FACILITY: MOSK. TEKHNOL. INST. LEGK. PROM. MOSCOW, USSR.

UNCLASSIFIED

1/2   007
TITLE--A NEW BATHYTHERMOSOUNDER -U-   UNCLASSIFIED   PROCESSING DATE--02OCT70
AUTHOR-(02)-SHEKHVATOV, B.V., SUVILOV, E.V.
COUNTRY OF INFO--USSR
SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 357-363
DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
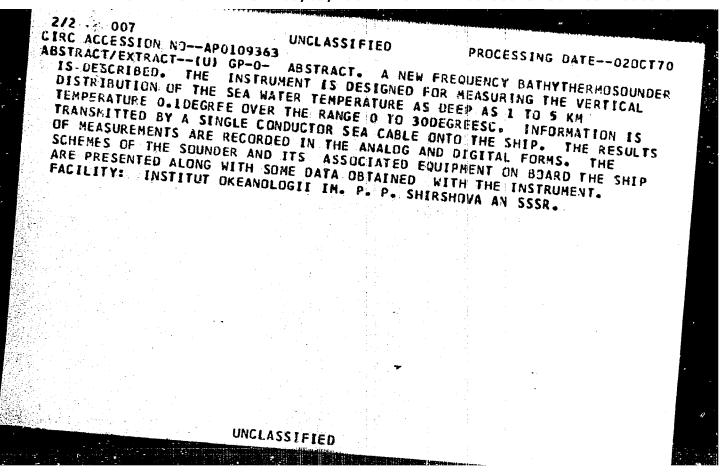TOPIC TAGS--OCEAN TEMPERATURE, OCEANOGRAPHIC INSTRUMENT, OCEAN DEPTH

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1279
CIRC ACCESSION NO--AP0109363   STEP NO--UR/0213/70/010/002/0357/0363
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0109363   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW FREQUENCY BATHYTHERMOSOUNDER
IS DESCRIBED. THE INSTRUMENT IS DESIGNED FOR MEASURING THE VERTICAL
DISTRIBUTION OF THE SEA WATER TEMPERATURE AS DEEP AS 1 TO 5 KM
TEMPERATURE 0.1DEGREE OVER THE RANGE 0 TO 30DEGREESC. INFORMATION IS
TRANSMITTED BY A SINGLE CONDUCTOR SEA CABLE ONTO THE SHIP. THE RESULTS
OF MEASUREMENTS ARE RECORDED IN THE ANALOG AND DIGITAL FORMS. THE
SCHEMES OF THE SOUNDER AND ITS ASSOCIATED EQUIPMENT ON BOARD THE SHIP
ARE PRESENTED ALONG WITH SOME DATA OBTAINED WITH THE INSTRUMENT.
FACILITY: INSTITUT OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.332 (Oleandomycinium).072

TEBYAKINA, A. E., DRUZHININA, E. N., SUVORKINA, D. V., National Institute for Antibiotics, Moscow

"Effect of the Presence of Oleandomycin in Triacetyloleandomycin on Determination of Biological Activity of Triacetyloleandomycin"

Abstract: (Authors' English-language summary modified) The presence of oleandomycin in triacetyloleandomycin (TAO) preparations had a marked effect on the biological activity of TAO as was determined by the agar-diffusion method using Bac. mycoides NV (resistant to tetracycline) as the test organism. An increase in effectiveness was also observed in dry mixtures of TAO with tetracycline during storage; this is attributed to the formation of oleandomycin in the dry mixture, oleandomycin being more diffusible in agar.

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EFFECT OF OLEANDOMYCIN PRESENCE IN TRIACETYLOLEANDOMYCIN
ON DETERMINATION OF TRIACETYLOLEANDOMYCIN BIOLOGICAL ACTIVITY

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Presence of oleandomycin in triacetyloleandomycin preparations had a marked effect on determination of triacetyloleandomycin biological activity by the agar-diffusion method using as the test-microbe Bac. mycoides NV resistant to tetracycline. An increase in the activity of triacetyloleandomycin in dry mixtures with tetracycline was observed during storage or preparation. The phenomenon may be attributed to formation of oleandomycin with a different nature of diffusion to agar.

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