USSR

UDC 621.039.51

NAUMOV, V. I., and YUROVA, L. N.

"Corrections to the Effective Resonance Integral With Large Steps in a Hetero-geneous Lattice"

Fiz. Yadern.Reaktorov [Nuclear Reactor Physics -- Collection of works], No 2, Moscow, Atomizdat Press 1970, pp 135-142 (translated from Referativnyy Zhurnal--Yadernyye Reaktory, No 3, 1971, Abstract No 3.5\.66)

Translation: In analyzing heterogeneous thermal neutron nuclear reactors it is usually assumed that resonant capture in the block can be described using the effective resonance integral in the Fermi moderation spectrum, this integral being a function only of the composition and size of the block containing the res-onent absorber. In actual lattices, due to the heterogeneous placement of blocks which are sources of fission neutrons, the distribution of fast and resonant neutrons may be heterogeneous across each cell, while the spectrum in the block in the high-energy area may differ significantly from the Fermi spectrum. The necessity of special analysis of the area of large lattice steps in the analysis of a resonant capture has been mentioned repeatedly in the literature; however, the approximate estimates of the effect made for heavy water lattices have resulted in relatively slight corrections in the area of actual lattice steps. Later data

1/2

USSR

NAUMOV, V. I., and YUROVA, L. N., Fiz. Yadern Reaktorov, No 2,
Moscow, Atomizdat Press, 1970, pp 133-142

for uranium-graphite lattices have indicated that there is a
considerable effect related to the difference between the neu-
tron spectra and the Fermi spectra for this class of nuclear
reactors. In connection with modern trends toward increasing
lattice step in uranium-graphite nuclear reactors and the nec-
essity of correct consideration of the number of captures in
the uranium, this effect is quite important and requires serious
study. Results of calculations on the influence of the spectrum
of fast neutrons on the reasonance approximation are presented
in this article. 3 figures; 2 tables, 4 biblio. refs.

2/2

USSR

UDC 621.039.51

NAUMOV, V. I., and YUROVA, L. N.

"Corrections to the Effective Resonance Integral With Large Steps in a Hetero-genous Lattice"

Fiz. Yadern. Reaktorov [Nuclear Reactor Physics -- Collection of works], No 2, Moscow, Atomizdat Press 1970, pp 133-142 (translated from Referativnyy Zhurnal--Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.66)

Translation: In analyzing heterogeneous thermal neutron nuclear reactors it is usually assumed that resonant capture in the block can be described using the effective resonance integral in the Fermi moderation spectrum, this integral being a function only of the composition and size of the block containing the res-onent absorber. In actual lattices, due to the heterogeneous placement of blocks which are sources of fission neutrons, the distribution of fast and resonant neutrons may be heterogeneous across each cell, while the spectrum in the block in the high-energy area may differ significantly from the Fermi spectrum. The necessity of special analysis of the area of large lattice steps in the analysis of a resonant capture has been mentioned repeatedly in the literature; however, the approximate estimates of the effect made for heavy water lattices have resulted in relatively slight corrections in the area of actual lattice steps. Later data

1/2

USSR

NAUMOV, V. I., and YUROVA, L. N., Fiz. Yadern Reaktorov, No 2, Moscow, Atomizdat Press, 1970, pp 133-142

for uranium-graphite lattices have indicated that there is a considerable effect related to the difference between the neutron spectra and the Fermi spectra for this class of nuclear reactors. In connection with modern trends toward increasing lattice step in uranium-graphite nuclear reactors and the necessity of correct consideration of the number of captures in the uranium, this effect is quite important and requires serious study. Results of calculations on the influence of the spectrum of fast neutrons on the reasonance approximation are presented in this article. 3 figures; 2 tables, 4 biblio. refs.

2/2

USSR

UDC 621.039

NAUMOV, V. I., and BELOUSOV, N. I.

"Approximate Calculation of the Spectrum of Thermal Neutrons in a Cell of a Thermal Reactor"

V sb. Fiz. yadern. reaktorov (Physics of Nuclear Reactors -- Collection of Works), No 2, Moscow, Atomizdat, 1970, pp 136-143 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V554)

Translation: An approximation of the neutron spectrum in a thermal reactor with Fermi and Maxwell spectra joined at $E \sim 0.6$ ev does not give a correct description of the transport region, since individual neutrons in scattering by nuclei of the moderator take on energy up to 3 ev, which is especially noticeable in high-temperature reactors. At the same time, exact multigroup methods require large expenditures of machine time. In this paper the method of collisions is applied to calculations for a cell with a graphite moderator. In the method the spectrum is represented by the sum of partial spectra of neutrons accelerated $1, \ldots, n$

$$\Phi(E) = \Phi_0(E) + a_n \phi^{(n)}(E + \Phi_T):$$

1/2

USSR

NAIMOV, V. L., and BELOUSOV, N. I., Fiz. yadern. reaktorov (Physics of Nuclear Reactors — Collection of Works), No 2, Moscow, Atomizdat, 1970, pp 136-143 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V554)

where $\Phi_0(E)$ is the spectrum of moderating neutrons only, $a_n \phi(n)$ is the spectrum of neutrons undergoing from 1 to n collisions; $\phi_T(E)$ is the Fermi spectrum. The calculation for the cell is made easy by the independence of the spectra of neutrons undergoing a large number of accelerations of the capture cross section of the medium, since this permits separation of the space and energy variables. This also made it possible to tabulate the microcross sections and the diffusion coefficients averaged over the par- tial spectra in the function of only the temperature and properties of the moderator. Thus, the calculation of the spectrum in the transport region reduced to the solution of a small number of equations of the diffusion type. A. G. Promokhov.

2/2

USSR

NAUMOV, V. A., SEMASHKO, V. N., ZAV'ALOV, A. P., CHERKASOV, R. A., and GRISHINA L. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan

UDC 539.27

"An Electron Diffraction Study of the Structure of the Molecules of Ethylene Chlorophosphate and Ethylene Chlorotrithiophosphate"

Abstract: On the basis of data obtained by an electron diffraction study carried out on ethylene chlorophosphate and its structural analog ethylene chlorotrithiophosphate (II; 2-thiono-2-chloro-1,3,2-dithiaphospholane) in the vapor state, the molecular structure of these compounds was determined. The five-membered heterocycle had a conformation of the semi-chair type in both cases. The molecular parameters for I were $r(C-C) = 1.547 \pm 0.020$, $r(C-O) = 1.488 \pm 0.020$, $r(P-O) = 1.438 \pm 0.015$, $r(P-O) = 1.616 \pm 0.010$, $r(P-Cl) = 2.057 \pm 0.010$ Å, $\angle O-P-O = 104.7 \pm 1.5°$, $\angle O-P-Cl = 113.9 \pm 2.0°$, $\angle O-P-Cl = 101.3 \pm 1.0°$, $\angle C-C-O = 108.2 \pm 1.0°$, those for II $r(C-C) = 1.525$ (assumed), $r(C-S) = 1.879 \pm 0.010$, $r(P=S) = 1.885 \pm 0.020$, $r(P-S) = 2.123 \pm 0.010$, $r(P-Cl) = 2.006 \pm 0.015$ Å, $\angle S-P-S = 98.4 \pm 1.5°$, $\angle S-P-Cl = 113.2 \pm 2.0°$, $\angle S-P-C = 104.2 \pm 1.0°$, $\angle C-C-S = 112.9 \pm 2.5°$.

1/1

- 43 -

NAUMOV, V. A.

DISSOCIATING GASES AS COOLANTS AND WORKING SUBSTANCES AT ATOMIC POWER PLANTS

CONTENTS

CONTENTS (Continued)

USSR

NAUMOV, V. A., SEMASHKO, V. N., and SHATRUKOV, L. F., Institute of Organic and physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan', and Kazan', Physico-Technical Institute, Academy of Sciences USSR, Kazan'

"AN Electron Diffraction Study of the Molecular Structure of the Dichloride of Isocyanatephosphonic Acid"

Abstract: An electron diffraction study of the dichloride of isocyanate-phosphonic acid $P(O)Cl_2N=C=O$ in the vapor state showed that the molecules of this compound have a trans-structure with respect to $P=O$ and NCO. The valency angle at N in the P-N=C group had a value of $120\pm1.5°$, which did not agree with the estimated value of $150°$ given by Yu. P. Yegorov et al., (Teor. i Eksper. Khim., Vol 5, 607, 1969). The length of the P-Cl bond was only by 0.013 Å greater than that in $POCl_3$, which is equal to 1.993 ± 0.003 Å. The fact that the difference was small can be ascribed to the close values of the electronegativities of the NCO group and Cl (2.8 and 3.0, respectively). The length of the P-N bond was 1.684 ± 0.010 Å, which is close to that in $Me_2NP(O)$ Ph_2, $P(O)(NH_2)_3$, Me_2NPOCl_2, and other similar compounds. The authors thank

1/2

USSR

NAUMOV, V. A., et al., Doklady Akademii Nauk SSSR, Vol 209, No 1, 1973, pp 118-121

Yu. P. Yegorov for a discussion of the results of the work. (Submitted by Academician B. A. Arbuzov, 8 Jul 72).

2/2

- 14 -

USSR

ZVEREV, G. M., NAUMOV, V. S., PASHKOV, V. A.

"Self-Focusing of Ultrashort Laser Pulses in Solid Dielectrics"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 2, Feb 73, pp 575-576

Abstract: The authors observed the formation of fine threadlike flaws in k-8 glass, leucosapphire, and fused and crystalline quartz under the effect of an isolated ultrashort laser pulse. The master oscillator was a neo-dymium glass laser with self-synchronization of axial modes which emits ultrashort pulses with a recurrence period of 17 ns. A single pulse was isolated from the emitted train by a Pockels electro-optical shutter and a nitrogen-filled gas discharger with laser ignition. The pulse was boosted by a two-stage amplifier to an energy of 0.03 J in a single trans-verse mode. The pulse length was estimated at 4.5 ns. Self-luminescence of the "threads" was photographed during pulse passage. Isolated bright spots on the fluorescing "threads" increase in number with pulse power. An increase in the length of the flaws in the direction toward the beam was also observed with increasing incident pulse power. Differences be-tween damage by isolated pulses and pulse trains are discussed.

1/1

- 54 -

USSR

UDC 632.95

NAUMOV, Yu. A., and KNYAZEVA, A. P.

"Synthesis of N,N-Diethyl Amides of Aromatic Acids"

USSR Author's Certificate No 295426, filed 25 Sep 69, published 6 Mar 72
(from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, (I, L-S), No 1(II), 1973,
Abstract No 1N460P by T. A. Belyayeva)

Translation: Substances with a general formula $RCONEt_2$ (I) (R = substituted
phenyl) are used as repellents for insects. They are prepared by reaction
of Et_2NCOCl (II) with aromatic hydrocarbon in the presence of catalysts
$SnCl_4$, $ZnCl_2$, $SbCl_5$, $TiCl_4$ at temperature above 100°C. Example. To 4.6 g
PhMe and 6.8 g II 13 g Sn Cl_4 is added under cold conditions. The reaction
mixture is heated at 120°C for 3 hr (evolved HCl is absorbed by water),
cooled, diluted with C_6H_6, washed with water to neutral reaction, concentrated
by evaporation, and distilled. The yield of I is 8.4 g (R = MeC_6H_4), b.p.
110-112°C/1. According to gas-liquid chromatography of the obtained product
contained 74% para-isomer and 26% ortho-isomer. Recrystallization from
alcohol yielded $p-MeC_6H_4CONEt_2$, m.p. 54-55°C. Other compounds I were
synthesized similarly and they were characterized by (R (basic isomer),
yield %, b.p. in °C, $n^{20}D$ in that order: Ph, 6.2, 108-110/1, 1,5119;
1/2

USSR

NAUMOV, Yu. A., and KNYAZEVA, A. P., USSR Author's Certificate No 295426, filed 25 Sep 69, published 6 Mar 72

$4\text{-EtC}_6\text{H}_4$, 92.8, 100-110/1, 1,5195; $4\text{-iso-PrC}_6\text{H}_4$, 82.3, 118-125/1, 1,5165; $4\text{-BuC}_6\text{H}_4$, 82.4, 135-138/1, 1,5130; $4\text{-sec-BuC}_6\text{H}_4$, 80, 135-138/1, 1,5125; $4\text{-tert-BuC}_6\text{H}_4$, 75.2, 150-155/2, 1,5160; $4\text{-iso-C}_5\text{H}_{11}\text{C}_6\text{H}_4$, 69.2, 135-140/1, 1,5090; $2,5\text{-Me}_2\text{C}_6\text{H}_3$, 86.8, 108-115/1, 1,5170; $3,4\text{-Me}_2\text{C}_6\text{H}_3$, 75.2, 119-121/1; 1,5258; $2,4\text{-Me}_2\text{C}_6\text{H}_3$, 87.3, 109-110/1, 1,5192; $2\text{-Me-5-iso-PrC}_6\text{H}_3$, 82.4, 122-130/1, 1,5100; $2,4,6\text{-Me}_3\text{C}_6\text{H}_2$, 90.4, 104-108/1, 1,5110; $2,4,5\text{-Me}_3\text{C}_6\text{H}_2$, 95.4, 128-138/1, 1,5210; $2,3,5,6\text{-Me}_4\text{C}_6\text{H}$, 90.1, 134-144/1, 1,5250; $4\text{-MeOC}_6\text{H}_4$, 78.7, 122-126/1, 1,5342.

2/2

- 36 -

USSR

NAUMOV, YU. A., BAZHANOVA, L. G., KNYAZEVA, A. P., PYATNOVA, YU. B., and
CHUDOV, L. N.

"Synthetic Methods for α-Naphtyl N-Methylcarbamate"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents --
collection of works), No 2, Moscow, 1972, pp 36-40 (from RZh-Khimiya, No 19,
Oct 73, Abstract No 19N482)

Translation: A review is given of the synthetic methods for α-naphtyl-N-
methylcarbamate. The method for the synthesis of naphtylcarbamate based on
methylisocyanate was considered to be the best one and chosen for detailed
technological development and expansion to the production level.

1/1

USSR

UDC 632.95

DREMOVA, V. P., NAUMOV, YU. A., and MOSEYKINA, N. F.

"Synthesis and Repellent Properties of Dialkylamides and Esters of Benzene-sulfonic Acid"

Tp. BNII dezinfektsii i steriliz. (Collection of Works of All-Union Scientific Research Institute of Disinfection and Sterilization), Vol 2, Vyp 21, 1971, pp 44-45 (from Referativnyy Zhurnal -- Khmiya, Svodnyy Tom, No 19 (II), 1972, Abstract No 19N433 by T. A. Belyayeva)

Translation: In order to study the repellent properties of dialkylamides and esters of benzenesulfonic acid, the compounds with a general formula $C_6H_5SO_2NRR'$ (I) (R and R' = alkyl, or RR'N = heteroring) and $C_6H_5SO_3R''$ (II) (R'' = alkyl) were synthesized. Heating of $C_6H_5SO_2Cl$ with secondary amines in water-alkaline medium resulted in formation of I compounds. (R, R' or NRR' are given, as well as boiling point in $°C/mm$, or boiling point in $°C$, n^{20}_D). Compounds I were characterized by: Et, Et, 40-1, -; Bu, Bu, 144/1, 1.5060; iso-Bu, iso-Bu, 56-7, -; piperidide, 90-1, -; hexamethyleninide, 35-6, 1.5470. The reaction of $C_6H_5SO_2Cl$ with alcohols in pyridine at ~ 20°C yielded II (R'' are given, as well as boiling point in $°C/mm$ or boiling point in $°C$,

1/2

USSR

DREMOVA, V. P., et al., Tp. BNII dezinfektsii i steriliz., Vol 2, Vyp 21, 1971, pp 44-45

$n^{20}D$): Et, 122-3, 1.5090; Pr, 126-8, 1.5060; iso-Pr, 105-7, 1.5020. The repellent indices of I and II are given with respect to fleas and mosquitoes.

2/2

- 21 -

USSR

UDC 632.95

NAUMOV, YU. A., DREMOVA, V. P., KOST, A. N., MENTUS, A. N., and SMIRNOVA, S. N.

"Substituted Amides, Esters of Pyromucic Acid, Furfuryl and Tetrahydrofur-
furyl Esters of Carboxylic Acids and Their Repellent Activity"

Tr. VNII dezinfektsii i steriliz. (Works of All-Union Scientific Research
Institute of Disinfection and Sterilization), 1971, vyp. 21, Vol 2, pp 24-30
(from RZh-Khimiya, No 16, 25 Aug 72, Abstract No 16N403 by T. K. YUDOVSKAYA)

Translation: Repellent properties are possessed by N,N-dialkylamides and
esters of pyromucic acid (I acid), furfuryl esters (FE) and tetrahydrofurfuryl
esters (TFE) of carboxylic acids. The reaction of furoyl chloride with
secondary amines in C_5H_5N yields the following dialkylamides of I (shown are
dialkyls, boiling point in $^{\circ}C$/mm or melting point in $^{\circ}C$, $n^{20}D$): Et_2, 91-2/0.5,
1.5060; Pr_2, 97-8/0.5, 1.4972; Bu_2, 113-4/0.5, 1.4929; $(iso-Bu)_2$, 101-2/0.5,
1.4910; $(CH_2)_5$, 57-8, ---; $(CH_2)_6$, 116-7/0.5, 1.5450; BuPh, 88, ---. The fol-
lowing esters of I are synthesized from I and the corresponding alcohol in
the presence of H_2SO_4 or by the reaction of furoyl chloride with alkaline
solutions of phenols (given hereinafter are the ester radical, boiling point
in $^{\circ}C$/mm and $n^{20}D$ or melting point in $^{\circ}C$): C_5H_{11}, 91-3/0.5, 1.4719; C_6H_{13}, 104-
5/0.5. 1.4720; C_7H_{15}, 118-20/0.5, 1.4711; C_8H_{17}, 125-6/0.5, 1.4713; C_9H_{19},

- 46 -

USSR

NAUMOV, YU. A., et al., Tr. VNII dezinfektsii i steriliz., 1971, vyp 21, Vol 2, pp 24-30

119-20/0.5, 1.4688; $C_{10}H_{21}$, 136-7/0.5, 1.4665 (24°); cyclohexyl, 95-7/0.5, 1.5026 (30°); $PhCH_2$, 136-7/0.5, 1.5552; Ph, 41.2, ---; $o\text{-MeC}_6H_4$, 109-10/0.5, 1.5566, $m\text{-MeC}_6H_4$, 37-8, ---; $p\text{-MeC}_6H_4$, 58-9; $o\text{-MeOC}_6H_4$, 75-6; $m\text{-MeOCH}_6H_4$, 137-8/0.5, 1.5640; $p\text{-MeOC}_6H_4$, 85-6, ---; $o\text{-ClC}_6H_4$, 53-4, ---; $p\text{-ClC}_6H_4$, 81-2, ---; $2,4\text{-Cl}_2C_6H_3$ 83-4, ----. FEs and TFEs are synthesized by the reaction of acid chlorides with the corresponding alcohols in a medium of C_5H_5N(shown are acid, boiling point in °C/mm and $n^{20}D$ first for FE, then for TFE): caproic acid, 110-3/0.8, 1.4580; 120-2/0.68, 1.4400; enanthic acid, 118-21/0.8, 1.4585, 135-7/0.8, 1.4428; caprylic acid, 128-30/0.8, 1.4580, 137-40/0.8, 1.4458; pelargonic acid, 118-20/0.5, 1.4590, 150-2/2, 1.4469; capric acid, 150-1/0.8, 1.4569, 138-40/0.8, 1.4480; pyromucic acid, 117-9/0.8, 1.5723, 124-6/0.8, 1.5038; benzoic acid, 146-7/0.8, 1.5423, 147-8/0.8, 1.5251; phenylacetic acid, 120-3/0.8, 1.4627; 135-6/0.8, 1.5129; phenoxyacetic acid, 145-6/0.8, 1.5379, 170-2/0.8, 1.5196; m-toluic acid, 145-7/0.8, 1.5423, 156-7/0.8, 1.5213. The highest repellent activity for fleas X. cheopis is possessed by dialkylamides of I in a dose of 40 g/sq m (86-100%, duration of action 8-10 days). FEs of enanthic and benzoic acids showed repellent activity for 4-8 days. Under field

2/3

USSR

NAUMOV, YU. A., et al., Tr. VNII dezinfektsii i steriliz., 1971, vyp 21,
Vol 2, pp 24-30

conditions satisfactory repellence of mosquitos of the genus Aedes is afforded
(when applied to the tissue in the proportion of 20 g/mg) by dipropylamide,
piperidid and hexamethyleneimide of pyromucic acid and by TFEs of benzoic,
phenosyacetic, enanthic and pelargonic acids [factor of repellent action for
the first few days 78-87%, duration of action 6-10 days; activity referred to
standard (DETA) was 0.5-0.8].

3/3

- 47 -

NAUMOV, Yu. V.

OPTIMIZATION OF THE SECONDARY SECTIONS OF WATER-COOLED NUCLEAR POWER PLANTS

UDC 621.311.2:621.039.001.2.003.1

JPRS 56350

26 June 1972

Introduction. In the near future, the increases in the power capacity of the electric power systems of most developed countries will be achieved by the construction of nuclear power plants. Water-cooled reactors have taken a leading position in the programs of development of nuclear power engineering in the USSR and abroad. The reliability of reactor systems, the traditional nature of the thermomechanical equipment required, the coolant and working fluid have allowed powerful energy units to be created of this type, capable of competing with the condensation units of thermal electric power stations burning organic fuel. As the equipment is mastered and operating experience is accumulated, the capabilities for technically and economically well-founded selection of equipment parameters for nuclear power plants increase and the attention given problems of optimization of nuclear power plant parameters with water-cooled reactors increases.

The selection of optimal water-cooled reactor power plant parameters has been the subject of a large number of works. Most of these (for example, [1-4]) study the problems of thermodynamic analysis of the cycles of possible power plant systems with water-cooled reactors, determine the influence of individual parameters on the efficiency of nuclear power plants and determine the optimal (by the criterion of maximum efficiency) values of the primary parameters. The results of these studies are of doubtless interest. However, it is impossible, based on the results of these studies alone, to draw any final conclusions concerning the optimal profile of power plant equipment. Thermodynamic studies must be looked upon as a first step toward more general technical and economic studies. Works dedicated to technical and economic optimization of nuclear power plant parameters are significantly scarcer. As

- 1 -

[I - USSR - K]

NAUMOV, Yu.Ye.

Microelectronics

JPRS 57333

25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin;
Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House,
Moscow, UDC 621.3821:621.396.6-181.5.

CONTENTS

[I - USSR - F]

- a -

recording and readout. The memory element consists of two four-electrode Gunn instruments, the first of which serves for recording and storage, the second of which serves for readout of the stored information. The time of the record-ing-readout cycle is about 0.5 nsec. The power computed in storage mode 1 is about 100 mW; in storage mode 0 it is about 115 mW.

The article contains 4 figures and 3 bibliographic references.

UDC 661.142 + 621.374.3

Diode-Transistor Logic Circuit with Feedback. Naumov, Yu.Ye. and Puchkov, I.P. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 166, Sovetskoye Radio Publishing House, 1972.

The article gives a theoretical analysis of the elec-trical parameters of a circuit with feedback; its advantages are analyzed in comparison to the diode-transistor circuit without feedback. It is shown that the use of a feedback circuit is especially effective in designing micropower cir-cuits. An experimental investigation in the micropower cir-cuit with feedback in the micropower band a comparison is given with the microcircuit "Mikrovatt-1".

The article contains 11 figures, 1 table, and 6 bib-liographic references.

UDC 621.382.029.64

Logic Elements on Gunn Diodes. Voronkova, G.M., Orlova, L.K., Starosel'skiy, V.I., and Sabel'nikov, N.N. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 184, Sovetskoye Radio Publishing House, 1972.

The article describes the properties of experimental samples of planar Gunn diodes. On 200-µm long samples the authors make a current impulse shaper and memory elements of two types.

The article contains 6 figures, 1 table, and 5 biblio-graphic references.

UDC 621.375.001.24:621.382.32

Static Analysis of the Simplest Differential Cascade on KDP Transistors. Stepanenko, I.P. In the Collection Mikroelek-tronika, edited by F.V. Lukin, No 5, p 190, Sovetskoye Radio Publishing House, 1972.

-10-

USSR

UDC 621.382.8--621.396.6--181.5

NAUMOV, YU.YE., BEDREKOVSKIY, M.A., PUCHKOV, I.F.

"Analysis Of Internal Noise In Devices Containing Integrated Logical Circuits"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 4, 1971, pp 106-120

Abstract: An analysis is made of the internal noise which is caused by induct- ive--capacitive stray coupling between signal conductors connecting integrated logical circuits on boards.   The basic factors are considered which de- termine the amplitude and duration of pulse noise during use of logical circuits with resistance coupling. A block diagram is shown of the equipment with which a comparison of various types of integrated circuits was made. Data are pre- sented on a number of types of integrated circuits. The stability is investig- ated of a circuit of this type as compared to induced impulse noise. 10 fig. 1 tab. 6 ref.

1/1

USSR

NAUMOV, Yu.Ye,

UDC 621.382:681.142.6

"Integrated Logic Circuits"

Integral'nyye Logicheskiye Skhemy [English version above], Moscow, 1970, 432 pp

Annotation: This book is devoted to one of the most important trends in the development of microelectronics -- integrated logic circuits for digital computers.

The book analyzes the primary design and technological specifics of various types of integrated circuits and presents a description of the properties of their components. A classification is presented of the primary types of logic circuits and their parameters. A theoretical analysis is given of the principal parameters of integrated logic circuits of the most important types, and formulas are presented relating the external parameters of the circuits with the parameters of their components. Various criteria are studied for comparison of integrated logic circuits. The comparison takes into consideration the specifics of design and technology of manufacture. Circuits with low power consumption are described. The problem of the pulse interference stability of logic circuits of various types is studied in detail. Statistical methods for analysis of the parameters of integrated logic circuits are presented and examples of their statistical evaluation are noted.

1/8

- 47 -

USSR

NAUMOV, Yu. Ye., <u>Integral'nyye Logicheskiye Skhemy</u>, Moscow, 1970, 432 pp.

The book is designed for engineers working in the area of electronics and electronic equipment, as well as students of the corresponding specialties. 160 figures; 6 tables; 123 biblio. refs.

TABLE OF CONTENTS

USSR

NAUMOV, Yu. Ye., <u>Integral'nyye Logicheskiye Skhemy</u>, Moscow, 1970, 432 pp.

3/8

- 48 -

USSR

NAUMOV, Yu. Ye., Integral'nyye Logicheskiye Skhemy, Moscow, 1970, 432 pp.

4/8

USSR

NAUMOV, Yu. Ye., <u>Integral'nyye Logicheskiye Skhemy</u>, Moscow, 1970, 432 pp.

5/8

USSR

NAUMOV, Yu. Ye., Integral'nyye Logicheskiye Skhemy, Moscow, 1970, 432 pp.

6/8

USSR

NAUMOV, Yu. Ye., Integral'nyye Logicheskiye Skhemy, Moscow, 1970, 432 pp.

7/8

- 50 -

USSR

NAUMOV, Yu. Ye., Integral'nyye Logicheskiye Skhemy, Moscow, 1970, 432 pp.

8/8

1/2   018
TITLE--POLYPHOSPHATE LEVEL IN SOME SPECIES OF YEASTS GROWN IN VARIOUS
CARBON SOURCES -U-
AUTHOR-(03)-STRESHINSKAYA, G.M., NAUMOVA, I.B., GOLOLOBOV, A.D.

UNCLASSIFIED

PROCESSING DATE--23OCT70

COUNTRY OF INFO--USSR

SOURCE--KOKL. AKAD. NAUK SSSR 1970, 190(1), 227-30

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, CARBON, PHOSPHATE, NUCLEIC ACID, CULTURE MEDIUM,
HYDROCARBON, GLUCOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1097

CIRC ACCESSION NO--AT0119956

STEP NO--UR/0020/70/190/001/0227/0230

UNCLASSIFIED

CIRC ACCESSION NO--AT0119956

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FRACTIONS OF P (ACID AOL., ACID INSOL., TOTAL ORTHOPHOSPHATE, AND NUCLEIC ACID P) WERE TABULATED FOR MATERIAL OBTAINED FROM C(ANDIDA) INTERMEDIA AND T(ORULOPSIS) FAMATA SPECIES AFTER INCUBATION FOR UP TO 3 DAYS IN CULTURE CONTG. ADDED PARAFFIN OR GLUCOSE. POLYPHOSPHATE CONTENT WAS ALSO TABULATED FOR C. LIPOLYTICA, C. TROPICALIS, C. PELLICULOSA, AND C. GUILLIERMONDII. ADDN. OF HYDROCARBONS TO THEMEDIUM INCREASED THE SYNTHESIS OF POLYPHOSPHATES 2 FOLD THAN IN MEDIA CONTG. EASILY ASSIMILATED GLUCOSE.

MOSK..GOS, UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

PROCESSING DATE--23OCT70

UNCLASSIFIED

027

TITLE--INTRAOCULAR PRESSURE IN PERSONS PRACTICING SWIMMING IN WINTER MONTHS -U-

UNCLASSIFIED

PROCESSING DATE--02OCT70

AUTHOR--NAUMOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 92-93

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, HYPERTENSION, BLOOD PRESSURE, SWIMMING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0684

CIRC ACCESSION NO--AP0102668

STEP NO--UR/0357/70/000/002/0092/0093

UNCLASSIFIED

CIRC ACCESSION NO--AP0102668   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REGULAR BATHING IN ICY WATER
BRINGS WITH IT REDUCTION OF INTRAOCULAR TENSION. AN EXAMINATION OF 50
AMATEURS FOND OF SWIMMING IN WINTER TIME SHOWED LOWERING OF INTRAOCULAR
PRESSURE IN 48 (96 EYES) OF THEM. THE EXTENT OF THE FALL OF THE TRUE
INTRAOCULAR PRESSURE (PO) ESTIMATED ACCORDING TO THE M. V. VURGAIT
NOMOGRAM VARIES FROM 1 TO 2 TO 8 TO 10 MM. THE CHANGE OF THE EYE VOLUME
DELTAV TURNED OUT TO BE GREATER AND EXTREMELY VARIABLE (FROM 2.5 TO 17
MM PRIME3. MULTIPLE TONOMETRY CARRIED OUT IN 7 PERSONS DURING 24 HOURS
ELICITED A LONG TERM DROP OF THE INTRAOCULAR TENSION LEVEL AFTER
SWIMMING. THE MODE OF THE HYPOTENSIVE ACTION HAS, SO FAR, NOT BEEN
FULLY, CLARIFIED, BUT IT SEEMS THAT HERE TAKES PLACE A REDUCTION IN THE
PRODUCTION OF CHAMBER HUMOR OMING TO THE SPASM OF THE OCULAR VESSELS AND
DIMINUTION IN THE TOTAL VOLUME OF THE CHOROID. IT GOES WITHOUT SAYING
THAT A DEFINITE ROLE PLAYS ALSO A CHANGE IN THE REFLEX REGULATION OF THE
OPHTHALMOTONE OCCURRING UNDER THE EFFECT OF ABRUPT COOLING. FURTHER
STUDIES WILL POSSIBLY ALLOW RECOMMENDING WINTER BATHING AS AN AUXILIARY
METHOD IN THE TREATMENT OF NONCOMPENSATED WITH MYOTICS GLAUCOMA IN
PERSONS OF MIDDLE AGE.

UNCLASSIFIED

025

UNCLASSIFIED

TITLE--STUDY OF ELEMENTARY ACTS OF DIFFUSION ,IN AN IRON ALUMINUM ALLOY, BY DIFFUSE X RAY SCATTERING -U-

PROCESSING DATE--27NOV70

AUTHOR-(03)-NAUMOVA, M.M., SEMENOVSKAYA, S.V., UMANSKY, YA.S.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA TVERDOGO TELA, APR. 1970, 12, (4), 975-982

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL DIFFUSION, X RAY SCATTERING, METAL CRYSTAL, IRON ALLOY, ALUMINUM CONTAINING ALLOY, CRYSTAL VACANCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1808

CIRC ACCESSION NO--AP0129176

STEP NO--UR/0181/70/012/004/0975/0982

UNCLASSIFIED

CIRC ACCESSION NO--AP0129176   UNCLASSIFIED   PROCESSING DATE--27NOV70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE INTENSITY OF DIFFUSE X RAY
SCATTERING IN A DISTORTED FE, 16 AT. PERCENT.   AL SINGLE CRYSTAL WAS
MEASURED AT VARIOUS POINTS OF RECIPROCAL SPACE WITHIN THE LIMITS OF THE
FIRST BRILLOUIN ZONE, USING MONOCHROMATIC CO,K SUBALPHA RADIATION AND
IONIZATION RECORDING, AFTER QUENCHING FROM 570DEGREESC AND AGAIN AFTER
TEMPERING AT 320DEGREESC FOR 2-30 H, AND THE RESULTS WERE INTERPRETED IN
TERMS OF THE MECHANISMS RESPONSIBLE FOR THE ELEMENTARY ACTS OF DIFFUSION
OF THE COMPONENT ATOMS IN THIS ALLOY.   THE RESULTS INDICATED THAT THE
VACANCY MECHANISM OF DIFFUSION WAS PREDOMINANT.

UNCLASSIFIED

USSR

NAUMOVA, M. M., et al., Solid State Physics, April 1970, pp 975-82

The time for the evolution of the intensity of diffusion scattering was determined and this was used to calculate the probabilities of jumps of atoms of iron across the five shortest distances during a temperature of 320°C. The probability that an atom of iron will jump is a nonmonotonic function of the distance.

Also calculated were the coefficients of diffusion and self-diffusion of iron during a temperature of 320°C. According to the experimental data it is also possible to draw a conclusion regarding the predominance of the vacancy mechanism of diffusion in the solid solution studied.

2/2

1/2   021   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--PHASE COMPOSITION OF A BINDER FOR A DIAMOND TOOL -U-

AUTHOR-(03)-POGODINALEKSEYEV, G.I., GRANIK, G.I., NAUMOVA, M.M.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 53-4

DATE PUBLISHED-------70

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

TOPIC TAGS--DIAMOND, CUTTING TOOL, ALLOY DESIGNATION, ALUMINUM ALLOY,
   COPPER BASE ALLOY, SOLID SOLUTION, INTERMETALLIC COMPOUND, TIN ALLOY,
   ZINC ALLOY, MAGNESIUM ALLOY/(U)M5 DIAMOND TOOD BINDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1290   STEP NO--UR/0129/70/000/002/0053/0054

CIRC ACCESSION NO--AP0106071
                            UNCLASSIFIED

2/2   021
CIRC ACCESSION NO--AP0106071   UNCLASSIFIED   PROCESSING DATE--02OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE COMPN. OF THE NEW M5
BINDER CONTG. AL 50, AN 24, CU 15, SN 5.5, MG 3.4, SI 1.5, AND CR
0.6PERCENT WAS STUDIED BY X RAY STRUCTURAL AND MICROPROBE ANAL. METHODS.
THE X RAY PATTERNS WERE OBTAINED BY USING CU K SUBALPHA RADIATION AND
POWD. AS WELL AS SOLID SPECIMENS. THE BINDER COMPN. CONSISTS OF 5
PHASES: THE AL BASE SOLID SOLN. CONTG. CU AND ZN (FCC.); THE ZN BASE
SOLID SOLN. (HEXAGONAL); THE CUAL SUB2 BASE SOLID SOLN. (TETRAGONAL);
THE MGZN SUB2 BASE SOLID SOLN. (HEXAGONAL); AND THE CU SUB3 SN BASE
SOLID SOLN. (HEXAGONAL). ALSO A CU BASE SOLID SOLN. (FCC.) AND THE CU
SUB6 SN SUB5 COMPD. (THE SUPERSTRUCTURE OF THE NIAS TYPE LATTICE) ARE
ASSUMED TO BE PRESENT.

UNCLASSIFIED

USSR

NAUMOVA, N. I.

"Solutions for Decomposable Games"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973, pp 247-252 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V474)

Translation: A cooperative game which can be decomposed according to the subdivision $S_1, \ldots, S_m$ of the set of players I is called a game in which effective coalitions are either contained in the elements of the subdivision or are combinations of these elements. The subdivision of the set of players is used to define the factor game and the relationships between the N-M solutions and the c-kernels of the game and factor game are studied.

1/1

USSR

NAUMOVA, N. I.

"Concerning the Existence of a Solution for Cooperative Games"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973,
p 253 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973,
Abstract No 10V475)

Translation: An example of a cooperative game of ten persons is pre-
sented which confirms the hypothesis that the set of games of n persons
having a solution is compact in the space of all games of n persons.

1/1   G. Tkachenko

1/2   009   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF OPTIMUM CONDITIONS FOR SEPARATION OF
  UNSAPONIFIABLE COMPOUNDS IN SYNTHETIC FATTY ACID PRODUCTION -U-
AUTHOR-(03)-SHAFRANSKIY, YE.L., KONOVALOV, B.S., NAUMOVA, R.I.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPEREAB. NEFTEKHIM. (MOSCOW) 1970, (5), 39-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDUSTRIAL PRODUCTION, FATTY ACID, CHEMICAL SYNTHESIS,
  CHEMICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1945   STEP NO--UR/0318/70/000/005/0039/0040

CIRC ACCESSION NO--AP0133789
                          UNCLASSIFIED

2/2   009   UNCLASSIFIED   PROCESSING DATE--13NOV7C
CIRC ACCESSION NO--AP0133789
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEPN. DEPENDED ON THE OIL
CONTENT AND FRACTIONAL COMPN. OF THE PARAFFIN USED FOR SYNTHESIS OF THE
FATTY ACIDS AND ON THE TIME FOR SETTLING THE PRODUCT IN TANKS.   THE
OPTIMUM SEPN. CONDITIONS WERE 95DEGREES AND 4 HR SETTLING.
FACILITY: NPK, NOVOKUIBYSHEVSK, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--03JUL70

TITLE--PURIFICATION OF ALUMINUM CHLORIDE. REMOVAL OF IRON IMPURITIES -U-

AUTHOR--NAUMOVA, T.N., BYKOVA, I.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 164-6

$\frac{5}{5}$
$\frac{}{10}$

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PURIFICATION, ALUMINUM CHLORIDE, IRON, SUBLIMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1978/1201   STEP NO--UR/0080/70/043/001/0164/0166

CIRC ACCESSION NO--AP0046124

UNCLASSIFIED

Acc. Nr: Abstracting Service: Ref. Code:
AP0046124   GEOPHYSICAL ABST.   5/70   21 R 0080

91810q Purification of aluminum chloride. Removal of iron
impurities, Naumova, T. N.; Bykova, I. G. (USSR). Zh.
Prikl. Khim. (Leningrad) 1970, 43(1), 164-6 (Russ). A sublima-
tion process is recommended for a thorough sepn. of $AlCl_3$ from
$FeCl_3$ impurities. The sublimation temp. is 240° and HCl is
used as carrier gas. N is less effective. $AlCl_3$ contg. $10^{-4}\%$
$FeCl_3$ can be obtained.
                                              A. P. Mueller

REEL/FRAME
19781201

USSR

NAUMOVA, T. S., and POPOVA, N. S., Moscow Institute of Medical Stomatology, and Brain Institute, USSR Academy of Medical Sciences USSR, Moscow

"Role of the Analysors in System Activity"

Abstract: The activity of the analysors is examined in the light of P. K. Anokhin's theory of the functional system. The authors cite the literature and results of their electrophysiological studies to demonstrate that in the formation of defensive conditioned reflexes, the conditioned signal and adjacent analysors are included with the unconditioned reflex analysor in the operational structure of the functional system. These analysors are shown to participate in all the key mechanisms of the functional system -- afferent synthesis, preparation for and decision making, correction of the results of action, and so forth. Signs of trace processes and forward reactions are evident at all levels of the analysors. Multisensory influences converge in the cortical and brainstem portions of these analysors. All levels of the analysors beginning with the first switching relays serve as a substrate to integrate heterogeneous excitations. This substrate is the basis of their participation in the key mechanisms of the functional system.
1/1

USSR

NAUMOVA, V. L., KOLESNIKOV, V. A., and KROTOVA, O. A., Scientific Research
Institute of Vegetable Growing

UDC 632.954:635.13

"The Use of Herbicides on Fall Plantings of Carrots and Beets"

Abstract: In 1967-1969 the Perlovskoye Department of the Experimental Model
Farm of the Scientific Research Institute of Vegetable Growing conducted
experiments for the purpose of establishing the optimum times and methods for
the use of herbicides (Propazine and Pyramin) on fall plantings of carrots and
beets to assure early production. It was found that Propazine is most effec-
tive against annual dicotyledonous weeds in carrot plantings when applied in
the fall in a dose of 2.5 kg/ha. The effectiveness of Propazine in a dose of
1.5 kg/ha is the same in the case of spring or fall application. The average
two-year carrot yield in variants of 1.0, 1.5 and 2.5 kg/ha dosages of
Propazine was at the level of control, but hand weeding labor was 58, 83 and 90
percent less respectively. Pyramin was found to be most effective for beet
plantings at a dose of 7.5 kg/ha applied in the fall. The effectiveness of
Pyramin at a dose of 5 kg/ha was the same whether applied in the spring or fall.
At doses of 3 and 4 kg/ha Pyramin was more effective in a fall than a spring

1/2

USSR

NAUMOVA, V. I., et al., Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 46-48

application. There was no decrease in the beet yield, while there was a 54-80 percent decrease in the hand weeding labor.

2/2

1/2   033   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--MIGRATION EQUILIBRIUM OF CESIUM, LITHIUM, AND BARIUM FILMS ADSORBED
    AT THE 110 FACE OF TUNGSTEN IN A HETEROGENEOUS ELECTRIC FIELD -U-
AUTHOR-(02)-KLIMENKO, YE.V., NAUMOVETS, A.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1262-3

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CESIUM, LITHIUM, BARIUM, METAL FILM, SURFACE FILM, TUNGSTEN,
    ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0948   STEP NO--UR/0181/70/012/004/1262/1263

CIRC ACCESSION NO--AP0121550
                        UNCLASSIFIED

2/2   033   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0121550
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LI, CS, AND BA FILMS WERE
INVESTIGATED ON THE (110) FACE OF W. THE EFFECT OF AN ELEC. FIELD ON
THE ADSORBED FILMS DECREASES WITH INCREASED INITIAL IMPURITY CONCN. THE
FIELD EFFECT CHANGES SIGN ON PASSAGE OF THE IMPURITY CONCN. THROUGH A
MAX. VALUE. THIS IS EXPLAINED BY THE PASSAGE OF THE POWER OF THE DOUBLE
ELEC. LAYER, WHICH CONSISTS ONLY OF POS. DIPOLES, THROUGH A MAX.
FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

172   031   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--STRUCTURE AND ELECTRON ADSORPTION PROPERTIES OF SODIUM FILMS ON THE
(011) FACE OF TUNGSTEN -U-
AUTHOR-(03)-MEDVEDEV, V.K., NAUMOVETS, A.G., FEDORUS, A.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 375-85

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SODIUM, METAL FILM, TUNGSTEN, ELECTRON, ADSORPTION, PHYSICAL
PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0131   STEP NO--UR/0131/70/012/002/0375/0385

CIRC ACCESSION NO--AP0054927
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054927
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE STRUCTURE OF NA FILMS ADSORBED
ON THE W (011) FACE AT 77-400DEGREES K WERE STUDIED BY USING SLOW
ELECTRON DIFFRACTION.   THE ADSORBED FILMS EXHIBITED A SERIES OF ORDERED
STRUCTURES WHICH ARE FORMED AT VARIOUS CONCNS. OF NA ATOMS.   ORDER
DISORDER TRANSITIONS WERE ALSO OBSD.   DATA ON THE NA FILM STRUCTURE ARE
COMPARED WITH CONTACT POTENTIAL DIFFERENCE DATA ON THE WORK FUNCTION AND
THE CONCN. OF NA ATOMS ADSORBED ON THE W (011) FACE.   DISTORTION OF THE
LONG RANGE ORDER IN NA MONOAT. FILMS DOES NOT CHANGE THE WORK FUNCTION.
REPULSIVE FORCES ARE PRESENT BETWEEN THE ADSORBED ATOMS ON THE (011)
FACE OF W.

UNCLASSIFIED

1/2   039   UNCLASSIFIED   PROCESSING DATE--30OCT
TITLE--LOW FREQUENCY OSCILLATIONS IN A HOT CATHODE PENNING DISCHARGE
   PLASMA -U-
AUTHOR-(03)-NAUMOVETS, V.G., ROMANYUK, L.I., SLOBODYAN, V.M.

COUNTRY OF INFO--USSR

SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 377-390

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DISCHARGE PLASMA, LOW FREQUENCY, OSCILLATION, CATHODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/2044   STEP NO--UR/0185/70/015/000/0377/0390

CIRC ACCESSION NO--AP0120687
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0120687   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF LOW   PROCESSING DATE--30OCT
FREQUENCY (1 TO 100 KHZ) OSCILLATIONS IN A HOT CATHODE PENNING DISCHAR
PLASMA, AND ANALYSIS OF THEIR INFLUENCE ON ION EXTRACTION SYSTEMS USED
WITH THIS TYPE OF DISCHARGE. IT IS SHOWN THAT THE INSTABILITY ARISES
DUE TO THE ONSET OF DENSITY WAVES WHOSE AZIMUTHAL DIRECTION OF
PROPAGATION COINCIDES WITH THE DIRECTION OF PLASMA ROTATION IN CROSSED
MAGNETIC AND ELECTRIC FIELDS AND WITH THE DIRECTION OF ELECTRON DRIFT
CAUSED BY A RADIAL PLASMA DENSITY GRADIENT. THREE AZIMUTHAL MODES WER
OBSERVED, CORRESPONDING TO DIFFERENT MAGNETIC FIELD STRENGTHS. THE
EFFECTS OF DISCHARGE PARAMETERS (CURRENT, VOLTAGE, GAS PRESSURE, AND
MAGNETIC FIELD STRENGTH) ON THE OSCILLATION FREQUENCY AND PLASMA
CHARACTERISTICS ARE DESCRIBED.   FACILITY: AKADEMIIA NAUK
UKRAINS'KOI RSR, INSTITUT FIZIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

1/2   009   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--AMALGAMATION OF VERY SMALL AMOUNTS OF POLONIUM WITH MERCURY -U-

AUTHOR-(03)-GLADYSHEV, V.P., YENIKEYEV, R.SH., NAURYZBAYEV, M.K.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 195-7

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMALGAMATION, POLONIUM, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0882   STEP NO--UR/0186/70/012/001/0195/0197

CIRC ACCESSION NO--AP0118051
                        UNCLASSIFIED

2/2   009   UNCLASSIFIED   PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118051
ABSTRACT/EXTRACT---(U) GP-0- ABSTRACT. MINUTE AMTS. OF PRIME120 PO (OF
THE ORDER OF 19 PRIME NEGATIVE12 MOLE--1.) WERE EXTD. QUANT. FROM
0.1-6.ON HCL OR HNO SUB3 SOLNS. BY AGITATION OF THE SOLN. FOR 5-10 MIN
WITH METALLIC HG. AT 20DEGREES AND A HG:SOLN. VOL. RATIO OF 1:10; THE
EXTN. FROM N HI AND HBR SOLNS. WAS ALSO NEARLY QUANT., BUT THE DEGREE OF
EXTN. FROM N H SUB2 SO SUB4 OR HCLO SUB4 SOLNS. WAS SIMILAR TO 70PERCENT
AND DECREASED TO SIMILAR TO 20PERCENT WHEN A SMALL AMT. (0.01 MOLE-1.)
OF THE DI-NA SALT OF EDTA WAS ADDED TO THE SOLN.

UNCLASSIFIED

NAVAKATIKYAN, A. O., KUNDIYEV, Yu. I., LYSINA, G. G., TOMASHEVSKAYA, L. I., DERKACH, V. S., KAPSHUK, A. P., KOVALEVA, A. I., STANISLAVSKAYA, TS. D., OSINSKAYA, L. S., and PARLYUK, A. F., Kiev Institute of Industrial Hygiene and Occupational Diseases

"Effect of Mental Work Accompanied by Nervous and Emotional Stress of Varying Degrees on the Cardiovascular System"

Moscow, Kardiologiya, No 3, 1973, pp 50-56

Abstract: In addition to making a statistical analysis of 1,585 cases of myocardial infarction among Kiev workers, the authors ran physiological studies on engineers, typesetters, mathematicians, and neurosurgeons. They found that the effects of mental work on the cardiovascular system vary with the degree of nervous tension and some other factors. The manifestations range from incipient functional disturbances of regulation to severe pathology. Moderate tension elevates blood pressure, the increase in systolic and diastolic pressures being related. Great tension, however, tends to disrupt the relationship probably because the centers regulating vascular tonus become uncoordinated. Intense nervous and emotional strain increases the heart beat as well as the "slow" waves among the periodic constituents of the correlation function of

1/2

USSR

NAVAKATIKYAN, A. O., et al., Kardiologiya, No 3, 1973, pp 50-56

the cardiac rhythm, an indication of an intensification of central neuroendo-
crine influences on cardiac activity. As the tempo of work and degree of
emotional stress increase, the amount of catecholamines and 17-hydroxycorticoids
excreted with urine also gradually increases. Thus, tense mental work markedly
affects the cardiovascular system. The resulting changes correlate with the
functions of the sympathico-adrenalin system and adrenal cortex.

2/2

USSR   UDC 612.84-053-058.9:061.12

KRYZHANOVSKAYA, V. V., and NAVAKATIKYAN, A. O., Institute of Gerontology, Academy of Medical Sciences USSR, and Institute of Labor Hygiene and Occupational Diseases

"Age-Related Changes in the Information Parameters of the Visual Analysor of Persons Doing Intellectual Work"

Abstract: Sixty-five well-educated persons 20 to 74 years of age were tested on coding tables with Landolt rings to study their visual and visuomotor pathways as indicators of work capacity. The subjects were required to code 5 types of tables differing from one another in the size of the alphabet and number of directions of the breaks in the Landolt rings (2, 4, 05 8). Each cycle was repeated in 3 days. The amount of information processed per symbol changed little with age. With different alphabet lengths, the results approached the maximum characteristic of the particular alphabet. The rate of information processing in the visuomotor pathway increased during the repetitions with equal alphabet lengths and different methods of coding. It gradually decreased in the 60- to 64-year group but slightly increased
1/2

USSR

KRYZHANOVSKAYA, V. V., and NAVAKATIKYAN, A. O., Gigiyena Truda i Profes-sional'nyye Zabolevaniya, No 7, 1971, pp 28-32

in the next older groups. The rate of information processing was higher in the visual pathway, but with increasing age decreased more than in the visuomotor pathway. With increasing alphabet length of the symbols to be coded, the throughput of the visual pathway decreased, especially when the coding involved complicated problems. Hence, persons over 50 to 55 should not be used in jobs where maximum rates of information processing are re-quired because the throughput of their visual pathway is less than half that of younger people.

2/2

NAVAKATIKYAN, A. O., KUNDIYEV, Yu. I., AKHRIMENKO, A. P., MAKSIMOVA, O. F.
VASILENKO, Yu. I., SAVENKO, N. P., BUZUNOV, V. A., TOMASHEVSKAYA, L. I., and
TERKACH, V. S., Institute of Industrial Hygiene and Occupational Diseases,
Kiev

"Principles for Quantitative Evaluation of the Difficulty and Strenuousness
of Work on the Basis of Physiological Data"

Abstract: A four-level classification of jobs by difficulty and stress is pro-
posed on the basis of research conducted by the Institute and the literature
data. The criteria used to measure the amount of effort involved as well as
the changes therein during the course of the workday include energy consump-
tion (ranging from under 150 kcal/hour for class 1 work, e.g., computer pro-
gramming, to 351 kcal/hour or more for class 4 work, e.g., steel casting),
muscular, cardiovascular, central nervous, and endocrine functions. A table
lists average values of several physiological functions in different kinds of
work while another evaluates the difficulty and strenuousness of different
kinds of jobs (e.g., operation of office machines is classified as class 1 in
difficulty and class 2 in strenuousness, lathework 2 and 2, steel casting 4
1/2

USSR

NAVAKATIKYAN, A. O., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 3-9

and 3). The article also discusses some of the theoretical and practical problems in establishing adequate criteria and in applying them to specific jobs, work conditions, and various groups of people (e.g., adolescents, females, elderly workers).

2/2

USSR   UDC 612.766.1:6

NAVAKATIKYAN, A. O., and GREBNYAK, V. P., Department of Labor Physiology, Kiev
Institute of Labor Hygiene and Occupational Diseases, Laboratory of Functional
Diagnostics, Donetsk Institute of Labor Hygiene and Occupational Diseases

"Application of the Theory of Stochastic Functions in Mathematical Description of
the Dynamics of Cardiac Rhythm during Work"

Abstract: The theory of stochastic processes was used in this study for physio-
logical analysis of cardiac rhythm dynamics throughout the work shift. The possi-
bility and the expediency of determining the correlation of functions and, particu-
larly, indices of the rate of its decrease (IK and m), as well as the average
arithmetic value of the cardiac rhythm and its standard deviations, were shown.
Data processing is considerably facilitated if the cardiac rhythm changes occur
as a stationary stochastic process. A similar method can be used to analyze the
dynamics of other physiological functions.

1/1

UDC 612.8+612.766.1

USSR

NAVAKATYKYAN, O. O., KUNDIYEV, Yu. I., LYSYNA, G. G., BUZUNOV, V. P.,
HRYSHKO, F. I., DERKACH, V. S., KAPSHUK, O. P., KYRYENKO, A. Ye., KARAKASHYAN,
A. N., KOVAL'OVA, G. I., RATUSHNA, A. M., TOMASHEVC'KA, L. I., NAGORNA, A. M.,
and MAYDYKOV, Yu. L., Kiev Institute of the Work Hygiene and Occupational
Diseases, Kiev

"Nervous Emotional Stresses as a Problem of Modern Work Physiology"

Abstract: The introduction of machines and automatic control instrumentation
into production lines at plants and factories and at many other institutions
requires of workers rapid coordination of actions combined with mental activity.
The volume of information input which requires a combination of physical and
mental ability has been increasing tremendously for the last decade. This has
produced nervous and emotional stresses and disturbances in the normal functions
of many human organs. Analysis of many workers from various branches of indus-
try as well as people occupied with mental work has shown that modern technology
imposes heavy stresses on an individual which are accompanied by abnormal func-
tion of the adrenal glands, and hypothalamus, and the hypophysial and sympatho-
adrenal systems. Measurements have shown that corticosteroid blood and urine

1/2

levels exceed the norm by as much as 42-57% in people under heavy stress. Emotional stress with distortion in the function of many systems were more often encountered among the young (17-18 year olds). These malfunctions included the secretion of adrenalin and noradrenalin, and disturbances in hemodynamics. Shifts in physiological functions among different occupational groups under identical stresses occur at different times and are closely related to age. They were more pronounced among older people (31-40 years old). The cardiovascular system occupies a prominent place in labor physiology, and there are many methods and approaches to study it. Some literature methods and those of the authors are described, including instrumentation. Mental work which is accompanied by nervous-emotional stresses influences profoundly the cardiovascular system within a wide range of deviations, including pathological functional disturbances and hypertension. The same is true for other occupations as well. The authors recommend the rational use of working hours and rest periods to avoid overstresses.

2/2

Acc. Nr:AP0037230   Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye
                  Zabolevaniya, 1970, Nr 2, pp 28 - 31

CLINICO-PHYSIOLOGICAL CHARACTERISTIC OF DUST-INDUCED BRONCHITIS
IN UNDERGROUND COAL MINERS

A. M. Marin, A. O. Nanabatikyan

· S u m m a r y

In 70 patients with chronic dust-induced bronchitis of long standing the disease
was investigated in its dynamics. Transformation into (in 17.1%) and suspected pneumo-
coniosis (in 8.6% of cases) were noted after a lapse of 2—5 years, in patients with
bronchitis exhibiting no signs of pulmonary fibrosis, non-diseased miners and practically
healthy individuals with no service record in an atmospheric environment of high dusti-
ness subject to determination were: vital capacity of the lungs (VCL), residual air
(RA), total lung capacity (TLC), maximum volumetric expiration rate (MVER) and
maximum volumetric inspiration rate (MVIR), which, when measured, were contrasted
against the due values. A distinct rise of RA (in absolute figures, in percentage to
TLC and to the due TLC) and an appreciable fall of the VLC, MVER and MVIR were
recorded in patients suffering from chronic bronchitis. Increased RA figures were registe-
red also in non-diseased miners with long service-record, which bears proof to an early
development of manifestations typical of emphysema and deranged pulmonary ventilation.

REEL/FRAME
19730154

USSR   UDC 669.28.054.2.546.21

SARAYEVA, A. A., MIKHAYLOV, S. M., PETUSHKOV, Ye. Ye., NAVALIKHIN, L. V.,
and TALANIN, Yu. N.

"Determination of Oxygen in Molybdenum Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 47-49

Translation: Activation analysis using fast neutrons was used to study the
distribution of oxygen in molybdenum single crystals produced by crucibleless
zone melting, allowing the change in concentration of impurities with increas-
ing number of passes of the zone to be determined. The errors in measurement
due to surface oxygen were determined. It was found that purification of the
surface of the specimens can be performed by bombardment with electrons.
Electrolytic etching at low oxygen contents is a less acceptable method of
purification. 1 Figure; 4 Bibliographic References.

1/1

NAVALIKHINA, M. D.

CHEMICAL INDUSTRY

So: JPRS 58728
12 APRIL 1973

UDC 66(10-)

DEVELOPMENTS IN CHEMICAL INDUSTRY ABROAD

[Article by N. P. Kotosbey, Ye. A. Parova, and M. D.
Navalikhina; Moscow, Khimicheskaya Promyshlennost' Zarnssion,
No 2, February 1973, pp 67-70]

Production of Ethanol

One industrial method of producing ethanol is the direct
hydration of ethylene in the presence of various acids (H_2SO_4,
H_3PO_4). According to patent data [1, 2], ethylene is passed
through 63-72 percent sulfuric acid at a temperature of
150-160°C and a pressure of 15-11 atm. The increased yield
1:0-160°C and a pressure of 15-11 atm. The increased yield
of alcohol (up to 96 percent) and the formation of small quan-
tities of by-products are advantages of this method over other
methods of synthesizing ethanol that are widely used in indus-
try (the oxidation of hydrocarbons and the Fischer-Tropsch proc-
ess). The shortcomings of the sulfuric acid method are air
pollution (hundreds of tons of waste sulfuric acid a day [3])
and significant corrosion of equipment.

Catalysts based on phosphoric acid are widely used in the
hydration of ethylene in the gas phase [4], but a trend toward
the use of new types of heterogeneous catalysts in this reaction
can now be observed. Recently such heterogeneous acidic cata-
lysts as Al_2O_3-SiO_2, Al_2O_3-B_2O_3, and H_3SO_4 have been proposed
and studied [7].

At the Institute of Industrial and Applied Chemistry at
Pisa University (in Italy) a study has been made of the hydra-
tion of ethylene in a borophosphate catalyst -- BPO$_4$ with a
specific surface of 21 m^2/g (Brunauer, Emmett, and Teller) [6].
It was established that different methods of producing boro-
phosphate lead to the production of catalysts with different

- 5 -

USSR

UDC 615.779.9

SHAKARYAN, G. A., NAVASARDYAN, A. A., SEDRAKYAN, R. O., and AMBARTSUMYAN, L. A., Yerevan Zooveterinary Institute

"The Effect of Monomycin and Paratyphoid Serum on the Preventive Properties of Blood Serum"

Abstract: Mice were administered blood serum from rabbits infected with Salm. ent. Gartneri v. dublin and 1) treated with monomycin, 2) treated with monomycin and paratyphoid serum, 3) treated with paratyphoid serum, and 4) not treated; within 24 hours the mice were infected with LD_{50} of Salmonella. dublin. The survival rates were 80% in the first group, 70% in the second group, and 65% in the third and fourth groups. In the control group, 40% of the mice survived. The nonsurvivors in the fourth and control groups died sooner than the nonsurvivors in the other groups. It is concluded that monomycin and paratyphoid serum do not inhibit increase in the preventive properties of rabbit serum and that monomycin augments these properties.

1/1

1/2   026
UNCLASSIFIED
TITLE--EFFECT OF THE TEMPERATURE GRADIENTS ON THE INTENSITY OF X RAY
  REFLECTIONS -U-

PROCESSING DATE--27NOV70

AUTHOR-(03)-NAVASARDYAN, M.A., KARAKHANYAN, R.K., BEZIRGANYAN, P.A.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA, 1970, 15(2), 235-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY DIFFRACTION, TEMPERATURE GRADIENT, QUARTZ CRYSTAL,
  SILICON SINGLE CRYSTAL, POTASSIUM COMPOUND, HYDROGEN COMPOUND, PHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1751

STEP NO--UR/0070/70/015/002/0235/0239

CIRC ACCESSION NO--AP0125369
UNCLASSIFIED

CIRC ACCESSION NO--AP0125369   UNCLASSIFIED   PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF THE TEMP. GRADIENT OF THE INTENSITY OF X RAY DIFFRACTION MAX. WAS INVESTIGATED TO STUDY HOW THEY DEPEND ON THE THICKNESS AND ABSORPTION OF THE REFLECTING CRYSTAL (MU T), ON THE MAGNITUDE AND DIRECTION OF THE TEMP. GRADIENT, AND ON THE INTERPLANAR DISTANCES OF THE REFLECTING PLANES OF CRYSTALS OF QUARTZ, SI, KH SUB2 PO SUB4, AND NH SUB4 H SUB2 PO SUB4 IN THE FORM OF THE PLANE PARALLEL THIN DISKS OR PLATES. THE MEASUREMENTS WERE CARRIED OUT UNDER CONDITIONS OF ANOMALOUS OR ORDINARY TRANSMISSION OF X RAYS FOR WHICH THE VALUE OF MU T WAS VARIED BY CHANGING THE CRYSTAL THICKNESS OR THE WAVELENGTH. IN GENERAL, THE INTENSITY OF THE REFLECTIONS DEPENDS ON THE MAGNITUDE AND DIRECTION OF THE TEMP. GRADIENT. AT SMALL VALUES OF MU T (ANOMALOUS DISPERSION BEING ABSENT), THE REFLECTION INTENSITY DUE TO THE GRADIENT INCREASES. AT MEDIUM MU T (0.5 SMALLER THAN MU T SMALLER THAN 15) THE REFLECTION INTENSITY CAN EITHER INCREASE AND DECREASE DEPENDING ON THE POSITION OF THE DIFFRACTION VECTOR (B) AND GRADIENT VECTOR (S). A GREAT MU T THE REFLECTION INTENSITY DECREASES DUE TO THE GRADIENT. THE INFLUENCE OF THE TEMP. GRADIENT INCREASES AS THE INTERPLANAR DISTANCE OF THE REFLECTION PLANES DECREASES. FROM THE POINT OF INFLUENCING THE REFLECTION INTENSITY, THE LINE DISLOCATION IS EQUIV. TO 2 TEMP. GRADIENTS DIRECTED AGAINST EACH OTHER. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

Antibiotics

USSR

NAVASHIN, S., All Union Institute of Antibiotics

"Some Principles of Antibiotic Therapy"

Moscow, Meditsinskaya Gazeta, 19 Feb 71, p 3

Abstract: Rational antibiotic therapy as administered in Soviet clinics is based on the following procedures and principles: (1) isolation of the causative agent of a disease and selection of the antibiotic(s) accordingly; (2) determination of optimal doses and methods of administration on the basis of the kinetics of the antibiotic in the body, taking into account the site of the pathological process and the need to maintain therapeutic concentrations in the blood and tissues; (3) knowledge of the side effects; (4) continuation of treatment until a stable therapeutic effect has been achieved; (5) prescription of combinations of antibiotics in accordance with their spectrum and mechanism of action. Dosages, mode of administration, indications and contraindications are outlined for a variety of antibiotics, including semisynthetic penicillins (oxacillin, methycillin, oleanaomycin, ristomycin, lincomycin, fusidin, ampicillin, tetracycline, kanamycin, and combinations thereof.

1/1

1/2   014   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ANTIBIOTICS INHIBITORS OF MALIGNANT NEW GROWTHS -U-

AUTHOR--NAVASHIN, S.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 193-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, INHIBITION, TUMOR/(U)ACTINOMYCIN ANTIBIOTIC,
(U)MITOMYCETIN C ANTIBIOTIC, (U)MITHRAMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3009/0120   STEP NO--UR/0063/70/015/002/0193/0199

CIRC ACCESSION NO--AP0138985
                    UNCLASSIFIED

2/2   014
CIRC ACCESSION NO--AP0138985   UNCLASSIFIED   PROCESSING DATE--27NOV70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   A REVIEW OF ANTIBIOTIC INHIBITORS
   OF TUMORS INCLUDING ACTINOMYCINS, MITOMYCETIN C, AUREOLIC ACID
   (MITHRAMYCIN) GROUP, ANTHRACYCLINES, STREPTONIGRIN GROUP, SUBSTANCES OF
   PROTEIN NATURE.   THE GENERAL NATURE OF ACTIVITY OF SUCH DRUGS IS BRIEFLY
   SUMMARIZED.

UNCLASSIFIED

USSR

UDC: 615.779.9-616-006.04

NAVASHIN, S.M., Doctor of Medical Sciences

Abstract: Chemotherapy of malignant neoplasms consists of administration of
chemical substances designed to reduce the activity of cancer cells or to
completely destroy the tumor. Around 1960, only about 10% of cases with
metastasis were treated with antitumor substances. Since 1966, this figure
has risen to 50%, mainly as the result of introduction of antibiotics and
other substances into therapy. In the Soviet Union, systematic research is
conducted on prospective agents, mainly actinomycetes and other -mycetes,
including all their sub-strains. The basic activity of antibiotics consists
of pressor effects. Replacing an amino group with an -OH or -Cl completely
destroys the properties of the antibiotic, and monomethylation reduces
activity by 90%. Since the more powerful compounds were also toxic, combi-
nations were made by which toxicity was reduced. The study of the molecular
and cellular pharmacology of antibiotics has increased their application to
many malignancies, including leukemia in children. An immense amount of
work has been done on bleomycin, which is particularly effective in neoplasms
of epithelial origin. In early cases not responding to other modes of treat-
ment, it was effective in 70% of cases -- a promising antimalignant substance.
1/1

1/2   025
UNCLASSIFIED
TITLE--EXPERIMENTAL STUDIES ON ANTITUMOR ACTIVITY OF POLYMYCIN -U-
PROCESSING DATE---09OCT70

AUTHOR-(03)-TERENTYEVA, T.G., FOMINA, I.P., NAVASHIN, S.M.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 442-447

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, ANTIBIOTIC, CARCINOMA, SARCOMA,
LYMPHATIC SYSTEM, MOUSE, TUMOR/(U)POLYMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1131
STEP NO--UR/0297/70/015/005/0442/0447
CIRC ACCESSION NO--AP0115150
UNCLASSIFIED

2/2   025   UNCLASSIFIED   PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0115150
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   DATA ON THE EXPERIMENTAL STUDY OF
ANTITUMOR ACTIVITY OF POLYMYCIN, AN ANTIBIOTIC FROM THE STREPTOTHRICIN
GROUP ARE PRESENTED.   PRELIMINARY STUDIES ON TOXICITY OF POLYMYCIN AND
REVERSIBILITY OF ITS TOXIC EFFECT FOR 24 HOURS WERE CARRIED OUT.   IN
EXPERIMENTS ON ANIMALS THE HIGHEST ACTIVITY LEVELS OF POLYMYCIN WERE
SHOWN WITH RESPECT TO WALKER CARCINOMA AND SARCOMA 45 ON RATS.   THE
ANTIBIOTIC HAD A MODERATE INHIBITORY EFFECT ON SOLID FORMS OF SARCOMA
180.   ASCITIC FORMS OF SARCOMA 180 AND LYMPHADENOSIS NK-LY WERE MOST
SENSITIVE TO POLYMYCIN (INHIBITION OF THE ASCITE DEVELOPMENT WITHIN 50
TO 60 PER CENT) AMONG THE MOUSE TUMOURS.   FACILITY: NATIONAL
INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

Acc. Nr.: AP0029322

COMPARATIVE EXPERIMENTAL STUDIES ON CEPORIN AND AMPICILLIN

S. M. Navashin, V. G. Zhukov

National Institute for Antibiotics, Moscow

Ceporin was studied experimentally in vitro and in vivo in comparison with ampicillin. Activity of the two antibiotics against 104 clinical strains of E. coli and Pr. mirabilis and their efficiency with respect to acute Coli sepsis of mice were determined.

REEL/FRAME

19680894

COMPARATIVE EXPERIMENTAL STUDIES ON CEPORIN AND OXACILLIN

V. G. Zhukov, S. M. Navashin

National Institute for Antibiotics, Moscow

Seporin was studied experimentally in vitro and in vivo in comparison with oxacillin. Activity of the two antibiotics against 113 clinical staphylococcal strains and their efficiency with respect to acute staphylococcal sepsis in mice were determined.

D.I.L.

REEL/FRAME
19711068

Acc. Nr: *AP0051955*

Ref. Code: *UR0297*

COMPARATIVE EVALUATION OF CERTAIN METHODS FOR PRIMARY SCREENING OF ANTITUMOR ANTIBIOTICS IN VITRO

S. M. Rudaya, V. A. Semenova, L. I. Osokina, S. M. Navashin

National Institute for Antibiotics, Moscow

Sensitivity levels of 3 in vitro tests (a mutant of Staphylococcus UV-3, antidehydrase activity of mouse tumor cells, cytotoxic effect in tissue culture) were studied comparatively, using 120 culture fluids of actinomycetes. The cytotoxic test was the most sensitive. The culture fluids selected according to this test in most cases inhibited at high dilutions the development of mouse experimental tumors. Antitumor activity was most often observed among actinomycetes belonging to series helvolus, chromogenes, griseus, lavendulae-roseus.

REEL/FRAME

19820442

A STUDY OF THE EFFECT OF CHEMOTHERAPEUTICS ON VIBRIO EL-TOR IN VITRO

Khundanov, L. Ye.; Ganin, V. S.; Navashin, S. M.

Irkutsk Plague Institute of Siberia and Far East, National Institute for Antibiotics, Moscow

Activity of 16 chemotherapeutics was estimated in vitro with respect to El-Tor and classical cholera vibrio. As a whole the effect of the drugs on vibrio El-Tor was less pronounced than that on cholera germs. Erythromycin, tetracycline and oletetrin had the same effect on El-Tor and classical cholera vibrio. Vibrio El-Tor were less resistant to sulfacyl than the classical cholera germs.

D. 77.

6

REEL/FRAME

19711069

Acc. Nr:
AP0034407

PRIMARY SOURCE: Antibiotil, 1970, Vol 15, Nr 2, pp 112-116

Ref. Code: UR 0297

COMBINED USE OF SEMI-SYNCHETIC PENICILLINS IN EXPERIMENTS
Petrova, M. A.; Berezina, Ye. K.; Chavdarcva, V. B.;
Navashin, S. M.
National Institute for Antibiotics, Moscow

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

D. n.

REEL/FRAME
19711067

SIGNIFICANCE OF AMPICILLIN CONCENTRATIONS IN THE TREATMENT OF SURGICAL PATIENTS

D'yachenko, G. M.; Butylina, L. V.; Vasil'yev, V. K.; Navashin, S. M.

Institute of Clinical and Experimental Surgery, Department of Experimental Therapy of National Institute for Antibiotics, Moscow

Ampicillin was used in the treatment of surgical cases and the dynamics of the antibiotic blood levels was studied. It was found that ampicillin produced a satisfactory effect and was retained in blood for 5 hours in therapeutic concentrations. In patients with the kidney affections the antibiotic therapeutic concentrations were 4—6 times higher than usual ones. The dose of ampicillin in the treatment of patients with the kidney insufficiency should be individual, depending on the drug blood level.

D.N.

REEL/FRAME

19711064

AA0039817 NAVDARASHVILI, I. I. UR 0482

Soviet Inventions Illustrated, Section 1 Chemical, Derwent, 3/70

239010 JET FOR PLASMA CUTTING OF METALS where in order to increase the quality of cutting at the account of eliminating the double arc-formation and improving the stability of the arc's burning, the electrode 2 is made hollow, with the diameter of aperture 3 not exceeding the inner diameter of the forming nozzle 8. The reservoir with the electrolyte 9 is connected with the cavity of the electrode.   22.1.68. as 1211953/ 25-27. O.Ya.MOSIASHVILI et alia Tbilisi Sect. Electric Welding Equipment Res. Inst. (15.7.69.) Bul.10/10.3.69. Class 49h. Int.Cl. B23k.

18

19741164

AA0039817

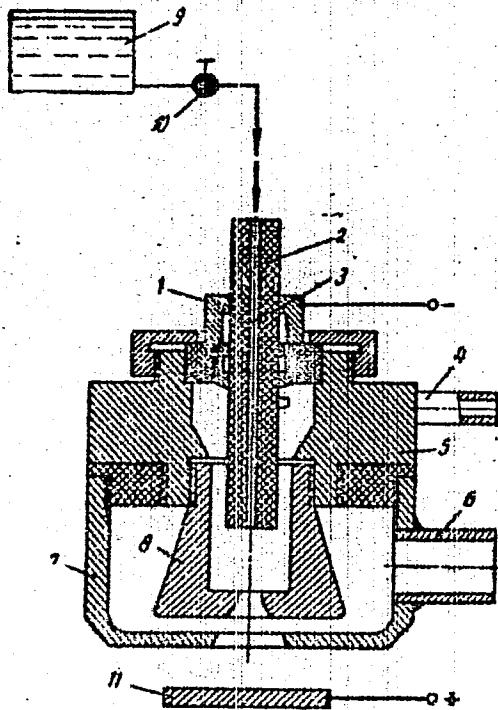19741165   ₁LD

2/3

AA0039817

AUTHORS: Mosiyashvili, O. Ya.; Suladze, R. N.; Navdarashvili, I. I.;
           Devdariyani, M. G.

Tbilisskiy Filial Vsesoyuznogo Nauchno-Issledovatel'skiy Instituta
Elektrosvarochnogo Oborudovaniya

3/3

19741166

Microelectronics

USSR   UDC 621.38:61

NAVERIANI, S.V., LEZHAVA, G.G., CHIKHLADZE, N.I.

"Microelectronic Circuit Of Multivibrator For Impedance Pneumograph"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technics.
Scientific-Technical Collection. Microelectronics), 1971, Issue 5(31), pp
145-146 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No
5A257)

Translation: In known circuits conversion of a change of chest impedance
(during breathing) into an electrical signal amounts to the fact that the
[vector] impedance of the chest tissue is connected into a discontinuity
[razryv] of the feedback circuit of the oscillator. In the process small
changes of the impedance change the feedback very slightly, and as a consequence
small changes are produced of the output voltage at the oscillator output (with
deep breathing, a deviation of ∿ 5 percent). In order to increase the sensitiv-
ity, a multivibrator was developed, fulfilled by a circuit of a 2-stage ampli-
fier with feedback using Type 2T332 silicon noncased semiconductors [PI] and
deposited elements. The [vector] impedance of the chest cage, reduced to two
active and one capacitance components of the chest impedance, enter the time-
dirver network of the multivibrator. At the input the capacitance component is
1/2

USSR

NAVERIANI, S.V., et al. Elektron.tekhnika.Nauch.-tekhn.sb.Mikroelektronika,1971,
Issue 5(31), pp 145-146

decreased and the active component is increased. The circuit of the multivibrator
assures direct conversion of the chest impedance into a FM-sequence of pulses.
With the use of electrodes having an area of 8 cm^2, deviation of the frequency
in the presence of deep breathing reaches 30--50 percent of the center frequency
of 50 kHz. The circuit is arranged directly on the electrode which considerably
increased the noise immunity and reliability. 1 ill. 2 ref. N.M.

2/2

- 44 -

USSR

NAVITSKAS, Z. Yu.

"Criteria of Ergodicity of Homogeneous Markov Chains in a Special Phase Space. III."

Lit. Mat. Sb. [Lithuanian Mathematics Collection], Vol 12, No 4, pp 153-174 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V88, by the author).

Translation: For Parts I and II see RZhMat, 1973, 2V59, 2V60.
    Criteria for ergodicity are suggested, expressed in terms of conditional probabilities of transfer in one step, for homogeneous (with respect to time) Markov chains (in a special phase space) which are more convenient for practical use than those presently available. In Part III of this article it is proven that each semicontinuous Markov chain can be related to an equivalent supplementary continuous Markov chain in the phase space E_1 = = {0, 1, 2, ...} and, furthermore, methods are presented for construction of these chains.

1/1

USSR

UDC 532.529

NAVOZNOV, O. I., and PAVEL'YEV, A. A., Moscow

"Dimensions and Condition of the Mixing Zone of two Parallel Streams"

Moscow, Energetika i Transport, No 5, Sep-Oct 71, pp 124—127

Abstract : Results are presented of the investigation on the initial region of the dependence of the mixing zone width b of a freon jet in an air wake on the relation of their speeds m. On the basis of data of the mixing zone width b_0 at m=0 and b_1 at m=1 and the relation of b to m at low values of m, an interpolation formula characterizing the relation of b to m when changing m from 0 to 1 (the speed of the central jet is higher than the wake speed) is suggested. Processing of experimental data of different authors shows that the mixing zone width b is proportional to 1-m at low m values. By changing the wake speed relation m from 0 to 1, a minimum value of b results at m=1 if $b_1 \leqslant b_0/2$, and at m < 1 if $b_1 > b_0/2$. One illustr., six formulas, seven biblio. refs.
1/1

- 8 -

USSR

UDC: 532.517.3:532.525.2

NAVOZNOV, O. I., PAVEL'YEV, A. A., YATSENKO, A. V., Moscow

"On the Transition to Turbulence in Submerged Jets and Wakes"

Abstract: An experimental investigation was made of the transition to turbulent flow in axisymmetric submerged jets and wakes of helium and air for different velocity profiles in the initial cross section. The initial velocity profile in submerged jets was determined by the boundary layer on the ends of tubes of various lengths. In jets of helium and air in an accompanying airflow, the initial velocity profile was created by using a honeycomb with radially varying hydraulic drag. The results of the study agree in general with data in the literature, although certain previous conclusions were not confirmed. The authors thank V. M. Iyevlev for his assistance and discussion of the results.

1/1

NAVROTSKAYA, L.M.

JPRS 59075
28-V-73

- 29 -

UDC: 614.23.064.52.007

JUNIOR MEDICAL AND OTHER SERVICE PERSONNEL IN SOME HOSPITALS OF KIEV AND
PROSPECTS OF ADEQUATE SUPPLY THEREOF

[Article by L.M. Navrotskaya, Candidate of Medical Sciences, R.V. Iarasenko,
G.N. Kornushova, Chair of Social Hygiene and Public Health Organization
(headed by Professor P.L. Shupik), Kiev Institute for Advanced Training
of Physicians; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1972,
submitted 30 April 1972, pp 26-29]

At the present time there is particular urgency with regard to
staffing hospitals of major cities with junior and other service
personnel.

The turnover among junior medical personnel of therapeutic and pro-
phylactic institutions of large cities is considerable, however, this has
not been reflected in statistical reports.

In the Soviet medical literature the duties of attendants in hospital
departments have been discussed rather comprehensively (S.A. Rusanov; C.
Sobolevskiy; V.Ya. Savylina; Z.G. Yezhkova). Several works deal with
availability of public health workers and methods of planning ward nurse
and attendant posts (T.A. Chernyavskaya; A.A. Margulis and M.A. Rogovoy) and
advancing their qualifications (N.K. Mitropol'skiy; C.K. Blagoveshchenskiy;
N.L. Shparkovskaya; A.M. Rodicheva). More recently there have been articles
dealing with work schedules of hospital attendants in Moscow (L.S. Slucharka
et al.). However, we failed to encounter any special articles dealing with
the social characteristics of such personnel and suggestions to diminish
turnover in the hospitals of large cities. This prompted the staff of
our chair to investigate this matter in several large hospitals of Kiev
and to delineate the means of improving the supply of junior medical and
other service personnel at therapeutic institutions.

Information pertaining to domestic conditions, family composition,
financial status, working conditions, desired duration of work day is
of great interest, not only to assess the situation regarding junior
medical personnel in hospitals but also for proper orientation in future
screening of attendants for employment.

UNCLASSIFIED

TITLE--THE TECHNIQUE OF RESEARCHING METAL EXTRACTIONS RATE DEPENDENCE ON SPECIFIC PHASE DIVISION SURFACES -U-

PROCESSING DATE--02OCT70

AUTHOR-(03)-KLETENIK, YU. B., NAVROTSKAYA, V. A., POTAPOVA, A. I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 13-18

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--EXTRACTIVE METALLURGY, INDIUM, IRON, PHOSPHORIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0564

CIRC ACCESSION NO--AP0113455

STEP NO--UR/0289/70/000/000/0013/0018

UNCLASSIFIED

2/2   012

CIRC ACCESSION NO--AP0113455   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPERIMENTAL TECHNIQUE FOR THE QUANTITATIVE RESEARCH OF METAL EXTRACTION RATE DEPENDENCE ON THE SPECIFIC PHASE DIVISION SURFACE IN SYSTEMS WITH SLOW ESTABLISHMENT OF EXTRACTION EQUILIBRIUM IS SUGGESTED. THIS TECHNIQUE IS BASED ON RECIPROCATING MIXER UTILISATION HAVING EXTENSIVELY VARIABLE AND SUFFICIENTLY STABLE MIXING RATE. PHASE DIVISION SPECIFIC SURFACE IS MEASURED BY MEANS OF LIGHT TRANSMISSION. THE SLOW STAGE OF IRON AND INDIUM EXTRACTION PROCESSES WITH THE HELP OF DIALKYL PHOSPHORIC ACIDS IS STATED TO HAVE A HETEROGENOUS NATURE. CONSIDERATIONS WERE MADE OF TWO TYPES OF EXTRACTION RATE DEPENDENCE ON SPECIFIC PHASE DIVISION SURFACE, CORRESPONDING TO TWO ESSENTIALLY DIFFERENT TYPES OF SLOW PROCESS STAGE, HOMOGENOUS AND HETEROGENOUS ONES.   FACILITY: INSTITUT FIZIKO KHIMICHESKIKH OSNOV PERERABOTKI MINERAL'NOGO SYR'YA, NOVOSIBIRSK.

UNCLASSIFIED

USSR

UDC 621.762.8

ZHUNKOVSKIY, G. L., NAVROTSKIY, B. S., and KOLOSVETOV, Yu. P., Kiev Poly-technic Institute, Institute of Problems of Material Science, Academy of Sciences UkrSSR

"Borating of Cobalt and Some Alloys Based on It"

Kiev, Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 33-35

Abstract: A study was made of the possibility of increasing the hardness of a cobalt component of a hard-alloy instrument by means of chemico-thermal treatment. Specially prepared alloys with 0, 2, 4, 8, and 20% WC were used to investigate the dependence of the rate of interaction of the alloys with the boron-containing medium on the temperature and duration of the process and also on the concentration of the dissolved WC in the cobalt. Borating is shown to take place most rapidly in pure cobalt, during which the thick-ness of the boron coating considerably increases when potassium fluoborate is used as an activator. Borating of pure cobalt and its alloys with 2-20% WC results in a hardness increase to 1100 kg/mm^2.   X-ray analysis revealed that the coatings on cobalt-based alloys consist of borides with a Co$_2$B lattice; their microhardness is analogous to that for a coating on pure cobalt. Three figures, one table, five bibliographic references.

1/1

USSR

BILYK, I. I., NAVROTSKIY, B. S., and SHARAPOV, V. G., Kiev Polytechnic Institute

UDC 621.762;619.018

"Cermet Hard Alloys"

Kiev, Akademiya Nauk Ukr SSR, Poroshkovaya Metallurgiya, No 7, Jun 72, pp 28-33

Abstract: Conditions are investigated for obtaining titanium carbonitrides by synthesis from titanium carbides and nitrides in a Tamman furnace at temperatures of 2000, 2100, and 2200°C in a nitrogen atmosphere. The properties of alloys produced on the basis of titanium carbonitrides mixed with nickel are studied and presented in graphs and tables. The analysis shows that an increase in nitrogen content (up to 13%) in titanium carbonitride alloys leads to an increase in their existance in cutting 20 Kh steel. This is explained by a probable increase in alloy plasticity while retaining relatively high hardness.

1/1

USSR

NAVROTSKIY, I. V., and TOMENKO, Yu. S., Ukrainian Scientific
Research Institute of Metals, Khar'kov

UDC 669.14-419:620.17-»

"Investigation of the Bending Strength of Layers in Multilayer
Steels in Wide Temperature Interval"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 1, 1973, pp 84-87

Abstract: The method and the results of experimental investi-
gations of the resistance to direct pull and of the shearing
strength of three-, five-, and seven-layer strips of St.2kp
and 1Kh18N10T steels in the +20° to -196° temperature interval
are described by reference to diagrams showing the experimental
arrangement and the form of investigated specimens. The tempe-
rature dependences of the cut-off and ultimate direct pull
stresses are shown. The experiments revealed that in multilayer
steels, consisting of metals differing by the linear expansion

1/2