USSR

UDC: 621.372.8:621.317.743(088.8)

SMOLOVIK, V. S.

"A Method of Determining the Amplitudes of Natural Oscillations in a Multiple-Mode Waveguide"

USSR Author's Certificate No 248022, filed 7 Nov 67, publihsed 12 May 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B183 P)

Translation: The proposed method is based on using a Michelson interferometer in its waveguide version (a resonator in the form of a waveguide section with its axis perpendicular to that of the multiple-mode waveguide being studied). The waveguide section is coupled to the multiple-mode waveguide by a dielectric plate inclined at an angle of 45° to the axes of the resonator and the waveguide.

1/1

USSR

UDC: 621.372.8:535

MAKEYEV, Yu. V., SMOLOVIK, V. S.

"Determining the Amplitudes of Modes in a Lens Waveguide"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vyp. 1, pp 117-127 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B198)

Translation: A method is proposed for determining the numbers and amplitudes of waves which propagate through a lens waveguide by using an open spherical resonator with spherical reflectors. The resonator is coupled to the lens waveguide by a weakly reflecting dielectric plate located on the bisector of the angle between the axes of resonator and waveguide. Formulas are given for calculating the parameters of such a device, called a wave mode analyzer. The design of the analyzer is described, and experimental data obtained by using it are given. Six illustrations, one table, bibliography of eight titles. Resumé.

1/1

USSR

UDC: 621.317.326

SMOLOVIK, V. S.

"A Method of Determining the Amplitudes of Natural Modes in a Multiwave Waveguide"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, p 193, patent No 248022, filed 7 Feb 67

Abstract: This Author's Certificate introduces a method of determining the amplitudes of natural modes in a multiwave waveguide by using a resonator made up of a waveguide section with axis perpendicular to the axis of the multiwave waveguide. This resonator is coupled to the waveguide by a dielectric plate placed at an angle of 45° to the axes of resonator and waveguide. The proposed method also utilizes a power indicator connected to the output of the multiwave waveguide. As a distinguishing feature of the patent, measurement is simplified by measuring the indicator signals as the position of one of the resonator reflectors is varied.
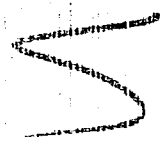
1/1

- 140 -

1/2   026
TITLE--AGE SPECIFIC PECULIARITIES OF PANCREATIC SECRETION AGAINST THE BACKGROUND OF DIFFERENT NUTRITIONAL PATTERNS -U-

UNCLASSIFIED   PROCESSING DATE--18SEP70

AUTHOR--SMOLSKAYA, G.P.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 22-26

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PANCREAS, SECRETION, NUTRITION, MALE RAT, WHITE RAT, PROTEIN, LIPID, GERONTOLOGY, CARBOHYDRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1479

STEP NO--UR/0244/70/000/002/0022/0026

CIRC ACCESSION NO--AP0101565

UNCLASSIFIED

2/2   026

CIRC ACCESSION NO--AP0101565   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN AN EXPERIMENT ON ALBINO MALE RATS OF DIVERSE AGE THE EFFECT OF DIFFERENT NUTRITIONAL PATTERNS ON THE PANCREATIC SECRETION WAS STUDIED WITH THE AID OF CYTOPHYSIOLOGICAL AND CYTOCHEMICAL METHODS. FROM THESE INVESTIGATIONS IT FOLLOWS THAT WITH AGE THE SECRETORY ACTIVITY OF THE PANCREAS DECLINES AND THAT AT THE ROOT OF THIS AGE QUALIFIED READJUSTMENT OF THE GLANDULAR TISSUE LIES. PROTEIN AND FAT RICH FOOD RATIONS HAVE AN ADVERSE EFFECT ONLY IN OLD ANIMALS KEPT ON THEM FOR A LONG TIME, WHEREAS IN YOUNGER ANIMALS MAINTAINED ON SUCH DIETS THE EXOCRINE CELLS ARE IN THE STATE OF AN ELEVATED SECRETORY ACTIVITY. CARBOHYDRATE RICH FOOD RATIONS BRING ABOUT DECREASED FUNCTIONAL ACTIVITY OF THE GLANDULAR EXOCRINE PARENCHYMA AT ALL AGES, THIS HOWEVER, BEING ESPECIALLY PROMINENT IN OLD ANIMALS.

UNCLASSIFIED

USSR

BUShUK, B. A., RUBINOV, A.N., and SMOL'SKAYa,P. I.

UDC 621.375.82

"The Effect of Thermal Optical Distortions on the Radiation Spectrum of a Rhodamine 6-G Laser with Noncoherent Pumping"

Abstract: When a liquid dye laser is pumped with noncoherent light, there is inevitably a nonuniform distribution of the index of refraction in the liquid. In a cylindrical tank, the optimum lasing conditions occur near the surface, where the greatest change in the index of refraction is found. This results in a characteristic cross section of the generated laser beam, with a center spot and a peripheral ring. The radiation from the ring is significantly more scattered than that in the central spot. It is evident that the coefficient of amplification in the lasing process is greater at the periphery, and since there is usually a change in spectral peak with variation in efficiency, the authors compared the spectra of the central spot and the peripheral ring.

Spectrographic observation shows that the radiation in the center spot is broken into sharp lines as a result of interference during multiple reflections. The peripheral radiation includes this component, but has a continuous component

1/2

USSR

BUShUK, B. A. et alia, Minsk, Zhurnal Prikladnoy Spektroskopii, Vol. 17, No 6,
Dec 72, pp 1112-1114

consisting of shorter waves than the discontinuous segment. It is postulated that
the peripheral zone does not generate laser radiation but simply amplifies that
which originates in the center and is diffused to the periphery; differential
scattering of short waves and higher amplification at the periphery results in a
structure with the spectral peak of the central spot on the long-wave side of the
primary peak. The continuous section results from the amplification of
luminescences developed in the maximum of the spectral band, and its continuous
character is due to the wide-angle nature of these luminescences. By screening
the central portion to prevent it from prematurely discharging the peripheral
areas, one can develop independent peripheral lasing; the resulting spectrum is
in the same region as the continuous spectrum of the previous experiment but
has the lined interference structure expected in true lasing. Analysis of the
shift between the two lasing spectra indicates a difference in thermal optical
losses between the periphery and the center of 0.02 cc^{-1}.

2/2

USSR

RUBINOV, A. H., SMOL'SKAYA, T. I.

UDC   621.373.8

"Effect of Photodissociation on the Energy Characteristics of Emission of Organic Dyes"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 15, No 5, Nov 71, pp 817-826

Abstract: The authors investigate the effect which photodissociation of dye has on the duration, power, and energy of laser emission excited by "white" light from flash tubes. The losses due to photodissociation of the molecules are calculated for various intensities and durations of the stimulating radiation. It is shown that when pumping exceeds the emission threshold by more than a factor of four, this form of loss becomes appreciably greater than losses due to triplet-triplet absorption. Photodissociation leads to saturation of the duration and energy of emission. The maximum possible values of these factors show an inverse proportional relation to the rate of photodissociation of the molecules. An estimate is given for the efficiency of emission of a dye solution, and conditions are determined for improving efficiency. The authors thank Academician B. I. Stepanov of the Academy of Sciences of the BSSR for interest in the work and constructive criticism. Four figures, bibliography of nine titles.

1/1

- 91 -

USSR

UDC 621.375.82

SMOL'SKAYA, T. I., ZHUKOVSKAYA, A. I., and RUBINOV, A. N.

"Effect of Natural Impurities On the Oscillation Characteristics of a Standard 6Zh Rhodamine Solution"

Abstract: The research described in this paper is aimed at clarifying the effect of the chemical purity in dye solutions on their oscillation efficiency and setting up experimental criteria for the content of harmful impurities in the solutions. In the authors' opinion little work has been done on chemical purity requirements of such solutions. Their experiments in the comparative measurements of the threshold, energy, and duration of the oscillations showed that solutions prepared from ethyl alcohol of the same brand may differ widely in their energy parameters, and that distillation of the alcohol was not always sufficient to restore fully the oscillation capability of the solution. The results of the measurements conducted by the author are given in the form of curves -- oscillation energy of the standard 6Zh rhodamine

1/2

USSR

SMOL'SKAYA, T. I., et al, Zhurnal Prikladnoy Spektroskopii, vol 17,
No 5, 1972, pp 775-780

solution as a function of water content and fluorescent output
quanta, absorption and luminescent spectra of 6th fractions --
together with a table of the characteristics of the various frac-
tions. The authors express their appreciation to B. N. Kas'kov
for his assistance with the luminescence measurements.

2/2

USSR

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RUBINOV, A. N., SMOL'SKAYA, T. N.

"Determination of the Luminescent Characteristics of Organic Dyes on the Basis of the Properties of Their Optical Generation"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 6, 1970, pp 1312-1315

Abstract: On the basis of equations linking the generation properties of organic dyes to their luminescent characteristics, a method is proposed for determining such parameters of the molecules as the probability of singlet-triplet conversion, the cross section of triplet-triplet absorption, and the lifetime of the meta-stable state. The method is based on measurements of pumping and generation characteristics.

1/1

USSR

SMOL'SKAYA, T. T., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 91-95

so after passaging. The level of lecithovitellinase activity in most of the passaged Staphylococci remained unchanged, while coagulase and hyaluronidase activities increased. Hemagglutinating activity decreased after passaging in ten of the 22 subcultures.

2/2

- 14 -

USSR

SMOL'SKAYA, T. T. and IVANOVA, S. P., Leningrad Medical Institute of Sanitary Hygiene

"Dynamics of Changes in the Toxigenic and Enzymatic Properties of Pathogenic Staphylococci in Tissue Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 91-95

Abstract: Eleven strains of pathogenic Staphylococci were passaged 25 times in HeLa and D-6 tissue cultures. Of 22 subcultures of the last passage, 19 produced more alpha-hemolysin and hyaluronidase than Staphylococci of the first passage. The production of lecithovitellinase increased in eight subcultures but remained unchanged in ten. Twenty subcultures of ten strains capable of releasing alpha-hemolysin retained this property after 25 passages. Of ten subcultures from five strains which produced beta-hemolysin on a solid medium, eight ceased to produce it under similar conditions in a liquid medium, while in 14 of 22 subcultures the titers of beta-hemolysin markedly decreased. All the strains that possessed delta-hemolysin were able to release it after passaging; three strains which previously did not elaborate this hemolysin were able to do

1/2

USSR

AKHVERDOV, I. N., SMOL'SKIY, A. YE., Doklady Akademii nauk BSSR, No. 4, Apr 72, pp 317-320

E_f and E_s are the deformation moduli of the filler and the matrix; P_{ad} is the adhesion of the filler to the matrix; V_f is the volume of the filler per unit volume of the concrete; L_f is the geometric characteristic of the filler; v_f and v_s are the Poisson coefficients of the filler and the matrix; and k_f and k_s are the coefficients for the operating conditions of the filler and matrix under contained deformation. A method was developed for obtaining a nonhomogeneous optically active plastic with physicomechanical characteristics similar to concrete. The material can be used in fabricating reinforced models of concrete structures in studying their stress state by a polarization-optical method both in the elastic stage and in the process of crack formation. Experimental studies of the initial stage of crack formation in reinforced concrete and in the reinforced model of nonhomogeneous plastic show that the nature of crack formation in the model corresponds to crack formation in the original. The nonhomogeneous plastic breaks up in the same way as concrete: the crack arises in the matrix and with an increase in the load it either bends the filler along the interface or rests against its top, corresponding to the rise of cracks in neighboring segments of the matrix.

2/2

- 51 -

UNCLASSIFIED

TITLE--THE PROBLEM CONCERNED WITH THE TIMELY DIAGNOSIS OF CANCER OF THE STOMACH -U-

PROCESSING DATE--30OCT70

AUTHOR-(05)-VASILENKO, V.KH., SOKOLOV, L.K., RAPOPORT, S.I., TSODIKOV, G.V., SMOLSKIY, B.G.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL.48, NR 3, PP 9-20

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, CANCER, RADIOGRAPHY, BIOPSY, DIAGNOSTIC MEDICINE, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--300 /0915

STEP NO--UR/0497/70/048/003/0009/0020

CIRC ACCESSION NO--AP0126574

UNCLASSIFIED

2/2   027
CIRC ACCESSION NO--AP0126574   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX EXAMINATION   PROCESSING DATE--30OCT70
(ROENTGENOLOGICAL, GASTROSCOPY, AIMED GASTROBIOPSY AND CYTOLOGY)
PERFORMED IN 475 PATIENTS SUFFERING FROM GASTRIC DISEASES PREOPERATIVELY
REVEALED CANCER IN 62 OUT OF 65 CASES. THE AUTHORS REPORT ON 12 CASES
OF EARLY PREOPERATIVE RECOGNITION OF CANCER OF THE STOMACH THANKS TO THE
USE OF AIMED GASTROBIOPSY AND CYTOLOGY. IT IS DEEMED EXPEDIENT TO
INTRODUCE NEW PRINCIPLES IN THE APPROACH TO THE PROBLEM OF RECOGNITION
OF EARLY CANCER. IN WHICH DECISIVE SHOULD BE BIOPSY INVESTIGATION
OBTAINED DURING AIMED GASTROSCOPY; HOWEVER AT THE SAME TIME CLINICAL
DATA IN THE DIAGNOSIS OF EARLY CANCER ARE RARELY PRACTICAL.
FACILITY: VSESOYUZNYY NAUCHNO-ISSLED. INSTITUT GASTROENTEROLOGII,
MINISTERSTVA ZDRAVOOKHRANENIYA, SSSR, MOSKVA.

UNCLASSIFIED

172   027

Heat, Combustion, Detonation

USSR

SMOL'SKIY, B. M., EL'PERIN, I. T., FATEYEV, G. A., and TARASEVICH, L. I.

UDC 536.244:66.015.23

"The Effect of Conductive and Convective Heat Exchange on the Speed of the Reaction Zone's Motion in a Porous Body That Is Being Purged"

Minsk, Teplo- i massoperenos -- sb. (Heat and Mass Transfer -- Collection of Works), Vol 2, Part 2, 1972, pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G150)

Translation: The authors, who are employed by the Belorussian SSR Academy of Sceinces' Institute of Heat and Mass Exchange and the Belorussian Polytechnic Institute in Minsk, analyzed the equations describing the steady temperature field in a reacting porous body that is being purged and, on the basis of this analysis, discovered the effect of the conductive and convective transfer of heat on the speed at which the reaction zone moves. They established that the effect of both types of heat transfer is analogous, although the analogy is not effective for the small Re numbers and the large values of the relative adiabatic combustion temperature that characterize the intensity of an internal heat source. The reason that the analogy is destroyed is related to the complication of the temperature profile's configuration near the reaction zone, for which the quadratic

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USSR

SMOL'SKIY, B. M., et al., Teplo- i massoperenos -- sb., Vol 2, Part 2, 1972, pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G150)

approximation of the profile that is the basic analogy becomes inadequate. (1 illustration; 4 bibliog. ref.)

2/2

- 27 -

USSR

UDC 621.791:621.8.035

AKHMEDOV, A. R., Candidate of Physical and Mathematical Sciences, AFANS'YEV, I. V., Candidate of Technical Sciences, and SMOL'SKIY, G. V., FILIMONOV, V. I., AKINOV, E. I., and RADZHABOV, R. S., Engineers, Institute of Electronics, Academy of Sciences Uzbek SSR

"Use of Concentrated Solar Energy for Welding Metals"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 74, pp 12-14

Abstract: Figures and technical data are given, for a solar furnace used to weld metals with solar energy. Samples of steel Khi8Ni0T were welded using this furnace where the sample thicknesses were 1.5 and 2 mm for a one-sided seam with complete burn-through and 3 mm for a one-sided seam on an asbestos block and a double-sided seam on a brass block. Experiments showed that the maximum welding rate should not exceed 1.5 mm/sec for the chosen thicknesses using the asbestos block or 1 mm/sec on the brass block. These welding speed ensure sufficient time for the seam and heat-affected zone to achieve the required temperatures. Use of the asbestos block made it possible to double welding speed but at the same time there was significant coarsening of structure and impairment of seam formation in comparison with welding on the heat-conducting brass block. Analysis of mechanical tests showed that solar weld-

1/2

USSR

AKHMEDOV, A. R., et al., Svarochnoye Proizvodstvom No 2, Feb 74, pp 12-14

ing, despite grain coarsening, provides good properties (shear strength was 90% of tensile strength of the base metal with a bend angle of 180°). Five figures, two tables, seven bibliographic references,

2/2

- 83 -

USSR

ZOLOTUKHIN, A. A., et al, Fizika i tekhnika poluprovednikov, No 10,
1972, pp 1961-1965

UDC: 621.315.592

given along with curves for carrier concentrations as functions of
the temperature and for the Hall mobility in silicon as a function
of the temperature.

2/2

1/2   052

UNCLASSIFIED

TITLE--EXPERIMENTAL STUDY OF NON STATIONARY HEAT TRANSFER BETWEEN METAL SPHERES AND A FLOW OF LIQUID AT CONSTANT TEMPERATURE -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-LYKOV, A.V., SMOLSKY, B.M., SERGEYEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--INZH. FIZ. ZHUR., JAN. 1970, 18, (1), 12-10

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER COEFFICIENT, SPHERIC SHELL STRUCTURE, ALUMINUM, BRASS, COPPER, LEAD, THERMAL CONDUCTIVITY, FLUID FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0378

STEP NO--UR/0170/70/000/018/0012/0020

CIRC ACCESSION NO--AP0111571

UNCLASSIFIED

CIRC ACCESSION NO--AP0111571   .UNCLASSIFIED   PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UNDERLYING THEORETICAL
PRINCIPLES OF A METHOD OF DETERMINING THE COEFF. OF NON STATIONARY HEAT
TRANSFER BETWEEN SPHERICAL METAL SAMPLES AND A FLOW OF WATER OR OTHER
LIQUID AT CONSTANT TEMP. ARE EXPLAINED AND SOME EXPERIMENTAL RESULTS
OBTAINED FOR AL, CU, PB, AND BRASS SPHERES ARE PRESENTED. THE NON
STATIONARY HEAT TRANSFER COEFF. VARIES CONSIDERABLY WITH TIME, IN
ADDITION TO BEING A FUNCTION OF THE THERMO PHYSICAL PARAMETERS OF THE
SAMPLE METAL. SOME GENERALIZED CURVES REPRESENTING THESE RELATIONSHIPS
ARE PRESENTED.

UNCLASSIFIED

SMOLYAK, V. A., UZLYUK, V. N., Candidates of Technical Sciences,
VASILENKO, V. I., ZELENIN, V. M., YASHIN, YU. F., Engineers

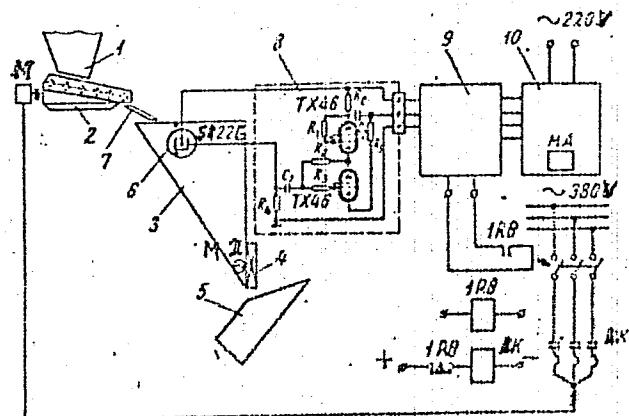"Gamma-Relay Level Gage for Automatic Dosage Control"

Translation: Volume dosage was applied to a rebuilt furnace of a
metallurgical plant since, under the prevalent technical conditions,
it was impossible to use a complex of typical equipment and mechan-
isms for assembling and dosing the coke in mass. Based on a GR-7
radioisotope gamma relay, a system for automatic regulation of coke
volume dosage controlling a roller disc screen for sifting coke
particles and a main skip hoist (see drawing) was developed.

1/5

USSR

SMOLYAK, V. A., et al., Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39

Automatic Radioisotope Control System for Coke Dosage
and Disc Screen Regulation:

2/5

USSR

SMOLYAK, V. A., et al., Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39

    1) coke bunker; 2) disc screen; 3) coke hopper;
    4) gate; 5) skip; 6) radiation detector;
    7) nozzle for adjusting input coke mass; 8) sensor;
    9) electronic relay block; 10) control block

    The radiation source is in a cast iron collimator container
outside the weight hopper 3. at its side wall. The container pro-
vides safety from radiation and forms a gamma radiation beam directed
toward the detector 6, which uses a SI22G counter in a protective
tube 200 mm in diameter and with a wall thickness of two mm in the
upper part of the interior of the hopper 3. The placement of the
detector inside the object measured, where the radiation by 30-40%
the activity of the source and thus reduces the danger of radiation
to personnel operating the loading mechanism.

    To prevent false operation of the gamma relay and to improve
the coke dosage automatic control system, a radiometric pair
3/5

USSR

SMOLYAK, V. A., etal, Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39

(source and detector) was placed so that the gamma beam, perpendi-
cular to the longitudinal axis of the screen, is not interrupted
by the flow until the moment the hopper is filled with a specified
amount of coke and its top is hit by the gamma beam.

To adjust the system -- i.e., to change the specified mass
within the limits of 100-200 kg -- the pouring nozzle 7 is shifted
by 200-300 mm and pulls the top away from the gamma beam to the
screen opposite the wall of the hopper, so that the latter is filled
with a large quantity of the coke before the screen is switched off.
And, conversely, the sideward approach of the top to the vertical
plane passing through the gamma beam leads to an earlier intersection
of the latter by the top of the coke mass. Consequently, the control
of the coke mass within the technical range depends on which of
the following interrupts the gamma beam: the top of the poured coke
mass or the side slope ascending to the top. In the latter case,
the top is higher than the level at which the gamma beam is per-
mitted to pass.
4/5

USSR

SMOLYAK, V. A., Et al., Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 5, 1970, pp 38-39

This control system also contains a sensor, an electronic relay block, and a control block, as well as a low-current control for the electric-feed network of the disc screen.

The control signal from the sensor is applied to the relay of the electron relay block operating in the positive (triggered) position. When the hopper is filled with the specified amount of coke, the gamma beam intensity is weakened to one-third its former level, and contacts IRB of the switch are opened. The coil of IRB is deenergized, the closed contacts IRB in the coil of the linear contactor LK open, and the motor M of the disc screen is switched off. The screen is once more switched on after the gate 4 is opened (motor M2) and the coke is poured from the hopper into the skip 5.

The radioisotope automatic coke dosage regulation systems are based on both coke-loading mechanisms. The annual saving to the economy amounts to 42 thousand rubles.
5/5

USSR

SMOL'YAKOV, A. F.   UDC: 577.4

"Generalizing the Problem of M. Dresher"

V sb. Issled. operatsiy (modeli, sistemy, resheniya) (Research on
Operations (of Models, Systems, and Solutions)--collection of
works) No 1, USSR Academy of Sciences, Computer Center, 1970,
pp 71-89 (from RZh--Matematika, No 7, 1972, Abstract No 7V471)

Translation: A game of the "attack-defense" type using n objects
of different value α_i is considered. At first, it is assumed
that the attack has one unit and the defense has k units, with
no more than one unit each on the object. It is then assumed
that the attack has A units and the defense D units,
profit function has the form

$$K(X,Y) = \sum_{i=1}^{n} \alpha_i x_i q^{y_i/x_i},$$

where q is the counteraction factor of one defense unit. A solu-
tion is given for both cases. I. Vrublevskaya
1/1

USSR

SMOL'YAKOV, A. F.

"Generalization of the M. Dresher Problem"

Translation: A study was made of a game of the offense-defense type for n subjects with different value α_i. It is first assumed that the offense has one unit, and the defense has k units distributed no more than 1 per subject. Then it is assumed that the offense has A units and the defense has D units, and the payoff function has the form $K(X, Y) = \sum_{i=1}^{n} \alpha_i x_i q^{y_i/x_i}$ (q is the counter action factor of 1 defense unit). The solution is given for both cases.

1/1

- 43 -

USSR

KOPVILLEM, U. Kh., SMOLYAKOV, B. P., and SHARIPOV, R. Z.

"Electron Spin Echo for Cr^{3+} in the Ruby Laser"

Leningrad, Fizika Tverdogo Tela, vol 14, No 5, 1972, pp 1444-1446

Abstract: In this paper, the authors set themselves the problem of finding, in the wavelength range of 3 cm, a quantum transition other than that found earlier and with better conditions for observing electron spin echo in ruby. Theory shows that for these conditions to be realized, the transition should be $3 \leftrightarrow 4$ in a field of 5430 gauss, at an angle of $\pi/2$. This theoretical conclusion was confirmed by experiment. Using a crystal of Al_2O_3: Cr^{3+} with a chromium ion concentration of the order of $3 \cdot 10^{-4}$, the experimenters detected an electronic echo from the Cr^{3+}. Curves are plotted for the echo amplitude as a function of the interval between oscillating pulses, and for the form of the echo signal as a function of the magnetic field intensity.

1/1

- 12 -

USSR

UDC: 669.14.018.58-15-13:620.17

BERNSHTEYN, M. L. and SMOLYAKOV, K. G., Moscow Institute of Steel and Alloys

"Effect of High-Temperature Strain Hardening and Deformation of Martensite on the Mechanical Properties of Carbon and Silicon Steels"

Abstract: Discussed are the effects of the substructure produced by high-temperature strain hardening (HTST) in 20, 20S2, 40, 40S2, 60, 60S2, 80 and 80S2 steels on their mechanical properties. It is shown that carbon-containing steels could be effectively strengthened while maintaining their plasticity by martensite deformation after preliminary HTSH. Steels additionally alloyed with silicon have demonstrated a rather high set of properties following this treatment and subsequent martensite deformation. Such results could not be achieved by martensite deformation after conventional heat treating. There is no correlation between the hardness and strength values of steel in the high-strength state. Strengthening of steel following strain hardening occurs, on the one hand, due to work hardening and, on the other, as a result of temper-induced unique redistribution of carbon following the higher dis-

1/2

USSR

UDC 621.785:620.17

BERNSHTEYN, M. L., and SMOLYAKOV, K. G., Moscow Institute of Steel and Alloys

"The Effect of High-Temperature Thermomechanical Treatment on the Mechanical Properties of Steels"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1971, pp 142-144

Abstract: The effects of high-temperature thermomechanical treatment (HTMT) and strain aging of martensite on the mechanical properties of carbon and silicon steels, types 20, 40, 60, 80, 20S2, 40S2, 60S2, and 80S2, were experimentally investigated. The investigation results and the increase of strength and plasticity properties as a result of HTMT are discussed by reference to diagrams showing the change of mechanical properties depending on the compression ratio by HTMT and tempering at 200°C. The possibility is demonstrated of realizing an effective strain hardening with conservation of a sufficient plasticity level as result of martensitic deformation after preliminary HTMT. Steels alloyed additionaly with silicon show a high complex of properties after HTMT and after martensitic deformation. Four illustrations, one bibliographic reference.

1/1

- 73 -

USSR

KUZIN, L. T., YEROKHIN, YE. A. and SMOLYAKOV, V. A.

"A Linguistic Model of the Organization of a Certain Class of Motions"

Inzh. Mat. Metody v Fiz. i Kibernet.. [Engineering Mathematics Methods in Physics and Cybernetics -- Collection of Works], No 2, Moscow, Atom-izdat Press, 1973, pp 92-98 (Translated from Referativnyy Zhurnal Kiber-netika, No 10, 1973, Abstract No 10V789)

Translation: The creation of cybernetic devices capable of performing complex functions without direct participation by man is related to the problem of creation of artificial intelligence. The imitation of mo-tions, in particular, is one component of this problem. This work studies the possibility of solving the problem of control of a mechanical manipulator using the apparatus of Khomskiy structural linguistics. As a manipulator, a three-link mechanism is studied, in which the first link has two degrees of freedom, the second link has one and the third link has three. At the end of the third link is a device for clamping of the target, which is fixed in space by two angles and the distance from the origin of the coordinates. The structural plan of the solu-tion of the problem includes a linguistic model of the control of motion and the algorithmic portion of the construction of motion. A grammar is constructed for solution of this problem. The set of symbols form-

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USSR

KUZIN, L. T., YEROKHIN, YE. A. and SMOLYAKOV, V. A., Inzh. Mat. Metody
v Fiz. i Kibernet., No 2, Moscow, Atomizdat Press, 1973, pp 92-98

ing the terminal dictionary (set of elementary motions) and nonterminal
dictionary is defined: the initial symbol; the group of symbols corres-
ponding to inscription of the basic actions; the group of symbols cor-
responding to complex motions. The rules of the grammar are presented.
An example of performance of the action "tranfer" is described.

2/2   A. Doroshenko

USSR

KUZIN, L. T., YEROKHIN, Ye. A., SMOLYAKOV, V. A.

UDC: 8.74

"Linguistic Model of Organization of a Certain Class of Movements"

Moscow, Inzh. mat. metody v fiz. i kibernet.--sbornik (Engineering Mathe-
matics Methods in Physics and Cybernetics--collection of works), vyp. 2,
Atomizdat, 1973, pp 92-98 (from RZh-Matematika, No 10, Oct 73, abstract No
10V789 by A. Doroshenko)

Translation: The creation of cybernetics devices which could perform com-
plicated functions without the direct participation of man involves the
problem of creating an artificial intelligence. Simulation of movements
is one of the specific components of this problem. The paper examines the
possibility of solving the problem of controlling mechanical manipulators
by using Chomsky's structural linguistics apparatus. The manipulator con-
sidered is a three-link mechanism in which the first link has two degrees
of freedom, the second has one, and the third has three. On the end of the
third link is an attachment for grasping a target which is positioned in
space by two angles and the distance from the coordinate origin. The
flowchart for solution of the problem includes a linguistic model of move-
ment control and the algorithmic part of movement plotting. A grammar is
1/2

USSR

KUZIN, L. T. et al., Inzh. mat. metody v fiz. i kibernet., vyp. 2, Atomizdat, 1973, pp 92-98

constructed for solution of the given problem. The authors define a set of symbols which form the terminal vocabulary (aggregate of elementary movements) and the nonterminal vocabulary: the initial symbol; the group of symbols corresponding to the list of main actions; the group of symbols corresponding to compound motions. The rules of the grammar are presented. An example of derivation of the action "Transfer" is described.

2/2

- 44 -

Acc. Nr: AP0049058   Ref. Code: UR 0357

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / ,
                 pp 75-77

FIRST RESULTS OF TREATING STRABISMUS AND AMBLYOPIA
AT A SPECIALIZED SANATORIUM DEPARTMENT

N. S. Bonovg, N. Ya. Zeltser, V. P. Smolyakova

Summary

In January, 1968, the first in the Soviet Union eye sanatorium department for the treatment of strabismus and amblyopia became operative at the Childrens' Clinical Hospital No 1. Dysbinocular amblyopia (with visual acuity of up to 0.1 inclusive) and that of median degree with acentric fixation, as well as nonaccomodative strabismus demanding complex treatment were among indications for the referral to the sanatorium department.

In addition to special pleopterthopic exercises the children undergo general tonic treatment for, being debilitated, their general health status must be improved to provide for successful correction of strabismus and amblyopia.

In the specialized sanatorium department a highly qualified, active, regular and long-term treatment of children with strabismus and amblyopia is ensured, which with outpatient management of some of them would appear to be impossible by virtue of domestic and other conditions.

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REEL/FRAME
19800845

1/2   010   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ELECTROPHILIC HALOGENATION OF OLEFINS. V. KINETICS AND MECHANISM OF
   BETA METHYLALLYL HALIDE CHLORINATION --U--
AUTHOR-(04)-BODRIKOV, I.V., SPIRIDONOVA, S.V., SMOLYAN, Z.S., SUBBOTIN,
   A.I.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 684-90

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, ELKENE, EXCHANGE REACTION, REACTION KINETICS,
   CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1958   STEP NO--UR/0366/70/006/004/0684/0690

CIRC ACCESSION NO--AP0125547
----------------------------------UNCLASSIFIED--------------------------------

CIRC ACCESSION NO—AP0125547   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE CHLORINATION OF H SUB2 C:CMECH SUB2 X (I) (X IS CL, BR, OR I) GIVES THE SUBSTITUTION PRODUCTS H SUB2 C:C(CH SUB2 CL)CH SUB2 X, CLCH SUB2 CME:CHX, AND THE ADDN. PRODUCTS CLCH SUB2 CHECLCH SUB2 X.   THE REACTION RATE IS INCREASED BY HCL, WHICH IS LIBERATED IN THE COURSE OF THE REACTION.   THE CONSUMPTION OF CL INCREASES IN THE FOLLOWING I SERIES (X GIVEN):   I LARGER THAN BR LARGER THAN CL.   THE SUBSTITUTION PRODUCTS ADDN. PRODUCTS RATIO INCREASES IN THE REVERSE ORDER.   THE SUBSTITUTION PRODUCTS ARE FORMED THROUGH THE INTERMEDIATE CARBONIUM ION AND THE ADDN. PRODUCTS THROUGH A CYCLIC CARBONIUMION.   FACILITY: GOR'K. POLITEKH. INST., GORKI, USSR.

PROCESSING DATE--30OCT70

UNCLASSIFIED

USSR

UDC: 621.376

SMOLYANETS, I. E.

"A High-Efficiency Balanced Modulator"

V sb. Vopr. elektrosvyazi (Problems of Electrical Communications--collection of works), Kiev, "Tekhnika", 1970, pp 96-103 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D474)

Translation: The paper describes a balanced modulator with plate modulation, and gives an analysis of the modulator indices as well as the results of an experimental check of a pilot model. It is shown that the modulator has higher qualitative and power indices when used in the power stages of a channel. Four illustrations, bibliography of three titles. Resumé.

1/1

USSR

SMOL'YANIKOV, A. A.

"Correct Reproduction of Time Functions on Analogue Computers"

Tr. Mosk. In-ta Radiotekhn., Elektron. i Avtomatiki [Works of Moscow Institute of Radio Engineering, Electronics and Automation], No 52, 1971, pp 77-80, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V693).

NO ABSTRACT.

1/1

Communications

SMOL'YANIKOV, V. M., SOROCHINSKIY, M. V., FEOFANOV, Yu. V., FILIPPOV, L. I.

"Principles of Identifying Signal Transmission Channels"

Abstract: Three principal classes of methods of identifying signal trans-
mission channels are considered: direct probing, correlation-filter
methods, and methods of comparison with a model. The second class, cor-
relation-filter methods, is analyzed in the greatest detail. Some old
and new or modified block diagrams for methods in this class are synthe-
sized by systematic analysis of a complex two-dimensional autocorrelation
function of the probing oscillation in the channel. Realization of the
direct method of probing by δ-pulses involves practical difficulties. The
methods of comparison with a model are based on utilizing the principle
of physical modeling. Five figures, bibliography of six titles.

1/1

1/2   025
TITLE--STUDY OF A RELAY SYSTEM FOR FLIGHT VEHICLE STABILIZATION -U-

UNCLASSIFIED   PROCESSING DATE--30OCT70

AUTHOR-(02)-GAUSHUS, E.V., SMOLYANIANOV, N.D.

CCUNTRY OF INFO--USSR

S

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA, MAR.-APR.
1970, P. 5-13
DATE PUBLISHED------70

SUBJECT AREAS--AERONAUTICS, PHYSICS

TOPIC TAGS--MOTION STABILITY, DIFFERENTIAL EQUATION SYSTEM, PERIODIC
MOTION, FLIGHT MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1503

STEP NO--UR/0484/70/000/000/0005/0013

CIRC ACCESSION NC--AP0125131

UNCLASSIFIED

2/2   025

CIRC ACCESSICN NU--AP0125131

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

PROCESSING DATE--30OCT70

ABSTRACT. STUDY OF THE DYNAMICS OF MOTION OF A FLIGHT VEHICLE ABOUT A CENTER OF MASS WITH A RELAY STABILIZATION SYSTEM THE LINEAR PART OF WHICH IS DESCRIBED BY AN INCOMPLETE THIRD ORDER DIFFERENTIAL EQUATION CONTAINING ONLY THE HIGHEST DERIVATIVE. USING THE METHOD OF POINT TRANSFORMATIONS AND THE THEORY OF BIFURCATIONS, AN ANALYSIS IS MADE OF THE CONTROL IN THE CASE OF AN IDEAL RELAY CHARACTERISTIC WHEN THE SYSTEM IS ACTED UPON BY A CONSTANT PERTURBING MOMENT. ALL THE SIMPLEST PERIODIC MOTIONS EXISTING IN THE SYSTEM ARE DETERMINED, AND THEIR STABILITY AND PARAMETER DEPENDENCE ARE INVESTIGATED. THE ABSENCE OF COMPLEX LIMIT CYCLES IS PROVEN. A REGION OF ATTRACTICN OF STABLE EQUILIBRIUM POSITION IS FOUND IN THE PHASE SPACE.

1/2   010

UNCLASSIFIED

TITLE--INVESTIGATION OF THIRD ORDER RELAY DYNAMIC SYSTEM -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-GAUSHUS, E.V., SMOLYANINOV, N.D.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 3, PP 65-80

DATE PUBLISHED-------70

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

TOPIC TAGS--DYNAMIC SYSTEM, ELECTRIC RELAY, CONTROL THEORY, DIFFERENTIAL
EQUATION SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1468

STEP NO--UR/0103/70/000/003/0065/0080

CIRC ACCESSION NO--AP0106224

UNCLASSIFIED

CIRC ACCESSION NO--AP0106224
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THERE IS CONSIDERED THE DYNAMICS
OF A RELAY CONTROL SYSTEM THE LINEAR PART OF WHICH IS DESCRIBED BY A
THRIDORDER DIFFERENTIAL EQUATION CONTAINING ONLY THE ELDEST DERIVATIVE.
THE PROBLEM IS SOLVED BY THE METHOD OF POINT IMAGES AND THE METHOD OF
THE THEORY OF BIFURCATION (1-2). ALL THE PERIODIC MOVEMENTS EXISTING IN
THE SYSTEM ARE DETERMINED, THEIR STABILITY AND DEPENDENCE ON THE
PARAMETER ARE INVESTIGATED.

UNCLASSIFIED

Acc. Nr.
AP0034071   Abstracting Service:
             CHEMICAL ABST. 4-70

Ref. Code
UR 0079

74276c   Thermographic study of the reaction of $Bi_4Ti_3O_{12}$ with vanadium pentoxide and molybdenum and tungsten trioxides. Smolyaninov, N. P.; Morozova, A. P.; Bochkareva, O. E. (Azovo-Chernomor. Inst. Mekh. Sel. Khoz., Zernovoi, USSR). Zh. Neorg. Khim. 1970, 15(1), 258-61 (Russ). Reactions of $Bi_4Ti_3O_{12}$ with V_2O_5, MoO_3, and WO_3, resp., were studied thermographically and by DTA. $Bi_4Ti_3O_{12}$ reacts with these oxides to give $BiVO_4$, Bi_2MoO_6, Bi_2WO_6, and TiO_2.
                                        H.M.JR

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18

19710714 REEL/FRAME

USSR

SMOL'YANINOV, V. M., FILIPPOV, L. V.

"Resistance to Interference of an Incoherent Receiver"

Abstract: The authors analyze the interference resistance of an incoherent receiver in multichannel systems with frequency diversity of channels, using a suboptimum method of controlling lumped interference. This method involves cutting off partial frequency channels affected by strong lumped interference. The case of fluctuations of all frequency components "in unison" with Rayleigh amplitude distribution is considered. A formula is derived for the probability of errors, and the resistance to interference of wide-band and narrow-band systems is compared. The authors thank L. F. Borodin for a number of comments made during the discussion of this paper.

1/1

U24

TITLE--AN OPTIMUM SPACED RECEPTION OF SYMMETRICAL BINARY SIGNALS WITH
EVALUATION OF PARAMETERS OF THE CHANNEL -U-

UNCLASSIFIED

AUTHOR--SMOLYANINOV, V.M.

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 1, 1970, PP 67-74

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SIGNAL RECEPTION, BINARY CODE, CIRCUIT PARAMETER, NOISE
ANALYZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0351

CIRC ACCESSION NO--AP0117588

STEP NO--UR/0109/70/000/001/0067/0074

UNCLASSIFIED

2/2   024
CIRC ACCESSION NO--AP0117588   UNCLASSIFIED   PROCESSING DATE--16OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYNTHESIS WAS PERFORMED OF THE
OPTIMUM SPACED RECEIVER OF SYMMETRICAL BINARY SIGNALS WITH THE
EVALUATION OF PARAMETERS OF THE CHANNEL. THERE WERE CONSIDERED ALL
POSSIBLE SEQUENCES OF TRANSMITTED SIGNALS OVER THE RANGE OF EVALUATION.
THERE WAS OBTAINED A SCHEMATIC OF THE RECEIVER OF ANTIPHASE SIGNALS WITH
RELATIVE CODING, AND EVALUATION WAS GIVEN OF ITS NOISE IMMUNITY.

UNCLASSIFIED

1/2   023

UNCLASSIFIED

TITLE--A METHOD OF RELATIVE SEMIQUANTITATIVE SPECTRAL INVESTIGATION OF THE SEMINAL FLUID -U-

AUTHOR-(03)-SMOLYANINOV, V.M., PASHINYAN, G.A., ZAYSEV, V.V.

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA I NEFROLOGIYA, 1970, NR 3, PP 36-38

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--REPRODUCTIVE SYSTEM, SPECTRUM ANALYSIS, SPERMATOGENESIS, PHOSPHORUS, IRON, CALCIUM, COPPER, SODIUM, ALUMINUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0170

STEP NO--UR/0606/70/000/003/0036/0038

CIRC ACCESSION NO--AP0120870

UNCLASSIFIED

CIRC ACCESSION NO--AP0120870
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT A METHOD OF
   SPECTRAL EMISSION ANALYSIS AS APPLIED TO THE STUDY OF INORGANIC
   COMPOSITION OF NORMAL AND PATHOLOGICALLY CHANGED HUMAN SEMINAL FLUID.
   DETERMINATION OF 6 MACRO AND TRACE ELEMENTS OF THE EJACULATE
   (PHOSPHORUS, IRON, CALCIUM, COPPER, SODIUM AND ALUMINIUM) IS PRESENTED
   AS AN EXAMPLE. THE RESULTS OF THESE INVESTIGATIONS WERE TREATED
   STATISTICALLY. THE METHOD IS RECOMMENDED FOR DIAGNOSIS OF SOME
   CONDITIONS OF THE EJACULATE IN CLINICAL PRACTICE.   FACILITY:
   KAFEDRA SUDEBNOY MEDITSINY II MOSKOCSKOGO MEDITSINSKOGO INSTITUTA IM. N.
   I. PIROGOVA.

UNCLASSIFIED

172   018

UNCLASSIFIED

TITLE--GENERAL THEORY OF CONDUCTING STIMULATION IN MEDIUM --U-

PROCESSING DATE--04DEC70

AUTHOR--SMOLYANINOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 15(1): 130-139. ILLUS. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GREEN FUNCTION, NEURON MODEL, BIOPHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605007/F09 STEP NO--UR/0217/70/015/001/0130/0139

CIRC ACCESSION NO--AP0139934

UNCLASSIFIED

CIRC ACCESSION NO--AP0139934   UNCLASSIFIED   PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF INTEGRAL METHOD A
GENERAL SOLUTION OF THE PROBLEM OF EXITATION PROPAGATION IN A MEDIUM,
GIVEN BY GREEN FUNCTION AND THE IMPULSE FORM OF GENERATING CURRENT, IS
PRESENTED. THE PROPERTIES OF STATIONARY PROPAGATION FOR SEVERAL MODELS
OF MEDIA ARE STUDIED. THE MODELS EQUIVALENT TO THE NEURON SYNAPTIC
MEDIUM ARE PRIMARILY USED, BECAUSE SPACIAL AND TIME PROPERTIES CAN BE
INDEPENDENTLY DETERMINED FOR THEM.   THE CABLE MODEL OF EMDIUM IS
COMPARED WITH THESE MODELS. THE COMPARING OF MEDIA IS PERFORMED BY THE
FUNCTION F(V), DETERMING THE DEPENDENCE OF POTENTIAL VALUE AT THE FRONT
OF EXCITED REGION OF THE RATE V.   GEOMETRICAL MEANING OF SPONTANEOUS
PROPAGATION OF THE EXITATION IN A MEDIUM IS DISCUSSED.   FACILITY:
INST. PROBL. INFORM. TRANS., ACAD. SCI, USSR. MOSCOW, USSR.

UNCLASSIFIED

KUZNETSOV, Yu. V., STRELKOV, G. P., SMOLYANINOV, Yu. M.

"Endurance of Reinforced Concrete Elements with Symmetrical, Low-Frequency Bending"

Raschet. Konstruktsiy Silos. Sooruzh. [Design of Silo Structures -- Collection of Works], Kiev, Budivel'nik Press, 1972, pp 55-66, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V1026, by the author's).

Translation: The process of rupture of reinforced concrete bent elements under sign-changing loads in a symmetrical cycle is studied with low frequencies (0.015 and 0.020 Hz) and fixed amplitudes of deformations and stresses. A unique form of rupture of these elements is discovered, requiring new theoretical concepts for its explanation. In particular, the creep theory of concrete is required. The dependence of endurance on frequency is established, decreasing with increasing period of oscillations. An experimental installation and methods of performing experiments are described. The analysis of norm documents and literature data presented in the work confirms the necessity of refining a number of coefficients used to design the structures for sign-changing loads. The results of the work can be used to calculate structures subjected to variable loadings at low frequencies, such as the supports of rotating furnaces, silo walls, etc. The work con-

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USSR

KUZNETSOV, Yu. D., STRELKOV, G. P., SMOLYANINOV, Yu. M., Raschet. Konstruktsiy Silos. Sooruzh., Kiev, Budivel'nik Press, 1972, pp 55-66. Contains recommendations for values of coefficients for reduction of calculated strengths for structures used under these conditions. 16 Biblio. Refs.

2/2

- 89 -

USSR

GINEVSKIY, A. S., KOLESNIKOV, A. V., PODOL'NYY, I. N., and SMOL'YANINOVA, A. N.

UDC 629.7.036.3:533.679.2

"Aerodynamic Characteristics of Flat Nonstalling Diffusers"

Moscow, Promyshlennaya Aerodynamika--Sbornik (Industrial Aerodynamics--Collection of Works), Mashinostroyeniye, No 30, 1973, pp 5-25 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 10, 1973, Abstract No 10.34.56. Resume)

Translation: Results are presented of computer calculations of the aerodynamic characteristics of the initial and principal sectors of a series of diffusers with straight walls for a broad range of angles of aperture (from 0° to 20°) and Reynolds numbers (from 10^4 to 10^7), and a parameter characterizing the initial nonuniformity of the velocity profile within the input cross section of the diffuser. 20 figures. 8 references.

1/1

- 22 -

USSR

GAUSHAS, E. V. and SMOL'YANOV, N. D.

"A Study of a Relay System For Stabilization of Aircraft"

Moscow, Mekhanika Tverdogo Tela, No 2, Mar/Apr 70, pp 5-13

Abstract: A rigorous mathematical analysis is given of the effect of a steady-state disturbance moment on the flight dynamics of an aircraft. A relay system having idealized stabilization character- istics is assumed, and the disturbance vector is also assumed to be constant. The linear portion of the stabilization system is shown to be expressible as a third order differential equation. Solutions are obtained for all possible simple periodic motions, and stability is calculated as a function of the aerodynamic parameters in effect. Equations and graphical solutions are presented which show the possible combinations of stable and unstable aerodynamic condi- tions, both of the steady-state and periodic types, that may occur. The analysis is applicable to determination of course stabilization for aircraft, trajectory variation and maneuvering of space vehi- cles, and related in-flight problems.

1/1

USSR

VILENSKAYA, R. L., GEL'VICH, V. A., GOLANT, M. B., and SMOLYANSKAYA, A. Z., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, and Institute of the Electronic Industry

"Effect of Millimeter Radiation on Colicin Synthesis"

Abstract: Exposure of the colicinogenic E. coli strain C600(E_1) to wavelengths ranging from 6.5 to 6.59 mm resulted in marked induction of colicin synthesis at 6.500, 6.530, 6.555, and 6.590 mm a lesser effect at 6.535, 6.560, and 6.575 mm, and induction almost indistinguishable from that of the control at 6.510, 6.540, and 6.570 mm. Thus, the relationship between the induction coefficient and wavelength was of a distinct resonance nature. Variation in the irradiation rate from 30 to 0.3 mwt, on the other hand, had almost no effect on the induction coefficient. (The biological effect was sharply decreased only when the irradiation rate was reduced to 0.03 mwt). The lack of relationship between the induction of colicin synthesis and the irradiation rate is cited as evidence for the nonthermal effect of millimeter electromagnetic oscillations.

1/1

018

TITLE--ANTITUMOR AGENTS AND DETECTION OF MODERATE PHAGES IN STAPHYLOCOCCI
-U-

UNCLASSIFIED

PROCESSING DATE--30OCT70

AUTHOR-(02)-SMOLYANSKAYA, A.Z., LEYKINA, F.I.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 514-519

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHAGE, ANTIBIOTIC RESISTANCE, STAPHYLOCOCCUS, ANTITUMOR DRUG
EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1867

CIRC ACCESSION NO--AP0125478

STEP NO--UR/0297/70/015/006/0514/0519

UNCLASSIFIED

2/2   018
CIRC ACCESSION NO--AP0125478   UNCLASSIFIED   PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANTITUMOR ANTIBIOTICS AND
ANTIMETABOLITES PROVED TO BE PRONOUNCED INDUCERS OF STAPHYLOCOCCAL
PHAGES, WHILE ALKYLATING AGENTS AND ANTITUMOR ALKOLIDES POSSESSED NO
SUCH PROPERTIES IS MOST CASES. 94PERCENT OF WIL STAPHYLOCOCCAL STRAINS
WERE CARRIERS OF MODERATE PHAGES INDEPENDANT OF THEIR BIOLOGICAL
PROPERTIES, SUCH AS PATHOGENECITY, PIGMENTATION, ANTIBIOTIC RESISTANCE
AND PHAGE TYPES.   FACILITY: INSTITUTE FOR EXPERIMENTAL AND
CLINICAL ONCOLOGY OF ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

EFFECT OF 5-FTORURACYL ON TRANSFERANCE OF MULTIPLE DRUG RESISTANCE FACTOR IN BACTERIA

A. Z. Smolyanskaya

Institute for Experimental and Clinical Oncology, Academy of Medical Sciences of the USSR, Moscow

Antitumor chemotherapeutics used in oncological clinics had no significant effect on occurrence of bacterial forms with multiple drug resistance among patients. However, in cases treated with 5-ftoruracyl decreased numbers of enterobacteria resistant to at least 4 preparations were noted. In vitro studies on 5-ftoruracyl showed that in did not suppress transferance of the multiple drug resistance factor but on the contrary was capable of increasing the yield of the conjugates with R-factor under definite conditions. Chloramphenicol was an active inhibitor of R-factor transferance when used alone or in combination with 5-ftoruracyl.

REEL/FRAME

19680902

6

1/2   010
TITLE--THE EFFECT OF ANTINEOPLASTIC CHEMOTHERAPEUTIC AGENTS ON EPISOMIC
   RESISTANCE DETERMINANT IN BACTERIA -U-
AUTHOR--SMOLYANSKAYA, A.Z.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970 PP
   30-34
DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMOTHERAPY, ANTINEOPLASTIC DRUG, URACIL,
   ANTIBIOTIC/(U)MITOMYCIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1846

CIRC ACCESSION NO--AP0103594

STEP NO--UR/0248/70/025/002/0030/0034

UNCLASSIFIED

2/2   010
CIRC ACCESSION NO--AP0103594   UNCLASSIFIED   PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE PRESENT WORK
WAS TO INVESTIGATE THE EFFECT OF SOME ANTINEOPLASTIC AGENTS WITH
DIFFERENT MECHANISMS OF ACTION, 5 FLUOROURACIL AND MITOMYCIN C, ON
TRANSMISSION OF THE R FACTOR.

UNCLASSIFIED

Information Theory

USSR

SMOLYANSKIY, B. Ye., VASIL'YEV, N. G., and ROMANOV, A. M.

UDC 681.327.12

"Graph Reader"

USSR Authors' Certificate No 298939, Cl. G 06 k 11/00, filed 21 Jan 69, pub-
lished 26 Apr 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 1, Jan 72, Abstract No 1A456P)

Translation: A graph reader is proposed. To increase accuracy in reading the
graphic recording of several processes, the reading-spot deflection oscilla-
tors through amplitude comparators are coupled with the outputs of the phase
demodulators of the two adjacent channels, while the search sweep oscillators
of all channels are series-connected, one of them being coupled with the unit
for indicating the simultaneous presence of second harmonics of the reading
channels. One illustration.

1/1

USSR

DUMANEVICH, A. N., SMOLYANSKIY, R. Ye., CHELNOKOV, V. Ye.   UDC 621.382.333.34

"Some Characteristics of the Temperature Change of the Static Switching Current of Thyristors"

V sb. Fiz. elektronno-dyrochn. perekhodov i poluprovodn. priborov (Zh. fiz. i tekhn. poluprovodnikov) (Physics of Electron-Hole Junctions and Semiconductor Devices -- Collection of Works [Journal of Physics and Technology of Semicon-ductors]), Leningrad, "Nauka," pp 120-124 (from RZh--Elektronika i yeye primeneniye, No 3, Mar 70, Abstract No 3B258)

Translation: The operation of a thyristor with shunted emitter p-n junctions is considered when switching takes place at the minimum temperature in the interval investigated, with voltage values equal or close to voltage breakdown of the collector p-n junction. It is shown that the dependencies of the effective transfer constant of the current and the switching current, on temperature characteristic extremes. The results obtained, as a counter-balance to known literature data, indicate the existence of a correlation between the switching current and temperature and clear up several experi-mental facts. 2 ill. 6 ref. V. S.

- 130 -

USSR

AMIROV, R. KH., SHOLYANSKIY, S. A., and SHEKHTER, L. SH.

UDC 530.161

"Inclusion of the Principle of Causality in the Dynamic Description of Non-equilibrium Systems"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 6, 1973, pp 48-51

Abstract: The correction to the Hamiltonian of the system corresponding to the source in the Liouville equation disturbing the invariance of this equation with respect to the time reflection was found by the nonequilibrium statistical operator method. The analysis of this correction permits the conclusion that the forces leading to irreversible behavior of the systems have an essentially nonpotential nature. The inclusion of the causality principle in the Hamiltonian of the system also permits a new representation to be presented for the nonequilbirum statistical operator.

1/1

USSR

DOLGOPYATOV, R.M., KATS, L.I., SMOLYANSKIY, S.A.

UDC 621.38:61

"Concerning The Possibility Of The Use Of High-Frequency Magnetic Fields For Creation Of Systems Of Modulation And Demodulation Of Laser Radiation"

V sb. Ispol'z. optich.kvant.generatorov. v sovrem. tekhn. i med. Ch.2-3 (Use Of Lasers In Contemporary Technology And Medicine. Parts 2-3--Collection Of Works), Leningrad, 1971, pp 12-15 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A526)

Translation: A formula is derived for computation of the amplitude modulation factor of laser radiation in a variable magnetic field. With H = 12 oersted a percentage of modulation of 17 percent is reached with a frequency of 44 MHz. For excitation of a modulating magnetic field of a frequency of 22 MHz, the long line of a spiral wound on the laser tube is used. Demodulation took place at a receiver acted upon by the photoelectromagnetic effect with use of a similar artifical long line. 3 ill. 2 ref. L. Sh.

1/1

- 47 -

Oscillators and Modulators

USSR

KATS, L. I., KIREYEV, N. N., SMOLYANSKIY, S. A.

UDC 621.376.222.029.64:533.9

"On the Problem of Modulating Electromagnetic Radiation by a Gas-Discharge Plasma in a Variable Magnetic Field"

Moscow, Radiotekhnika i Elektronika, vol 16, No 12, Dec 71, pp 2273-2277

Abstract: A theory is constructed in the "average electron" approximation for a microwave modulator of electromagnetic radiation based on utilizing magneto-optical effects in a gas-discharge plasma located in an alternating field. The results show the possibility of developing such modulators for the millimeter and submillimeter bands in the case of static and rf magnetic field strengths suitable for practical use. The authors thank B. K. Tsykin, D. I. Trubinkov and M. A. Khodorkovskiy for discussing the results of the work. Two figures, bibliography of seven titles.

1/1

1/2   045

TITLE--THE EFFECT OF LASER FIELD STRUCTURE ON THE SPECTRUM OF MODULATED
RADIATION -U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR-(03)-DOLGOPYATOV, R.M., KATS, L.I., SMOLYANSKIY, S.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 2, 1970, PP 48-52

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MULTIMODE LASER, LASER MODULATION, MODULATION SPECTRUM,
SUPERHIGH FREQUENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1283

STEP NO--UR/0108/70/000/002/0048/0052

CIRC ACCESSION NO--AP0123242

UNCLASSIFIED

2/2   045
CIRC ACCESSION NO--AP0123242   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE AUTHORS STUDY THE EFFECT OF
THE COMPLEX STRUCTURE OF A LASER, WHERE THE STRUCTURE IS CONDITIONED BY
THE PRESENCE OF MULTIMODALITY, ON THE SPECTRUM OF MODULATED RADIATION.
THE CALCULATIONS ARE MADE FOR A KERR CELL TYPE MODULATOR OPERATING IN
THE SUPER HIGH FREQUENCY RANGE.

PROCESSING DATE--13NOV70

UNCLASSIFIED

USSR

UDC: 621.374.5(088.8)

SMOLYANSKIY, V. A., FAYNSHMIDT, L. I., SMOLYANSKIY, R. Ye.

"An Electronic Time Delay Device"

USSR Author's Certificate No 273343, filed 13 Jan 69, published 10 Sep 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G315 P)

Translation: This Author's Certificate introduces a delay device which
contains a parallel time-mark RC circuit, a thyristor and a pulse generator.
To increase the time-holding stability of the device, a resistor, semicon-
ductor diode, thyristor, and a second resistor are connected in series to
the power supply, the common point of the resistor and the anode of the
semiconductor diode being connected to the output of the pulse generator,
while the common point of the cathode of the semiconductor diode and the
anode of the thyristor is connected to the cathode of a second semiconductor
diode whose anode is connected through a resistor to the lead of the RC
circuit. To increase the delay time, a resistor is connected between the
anode of the thyristor and the power supply.

1/1

- 22 -

TITLE--BINDER FOR DIAMOND OR BORAZON TOOLS -U-   UNCLASSIFIED

AUTHOR-(03)-YEPELYANOV, S.R., SHILO, A.E., SMELYAR, A.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,041

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

DATE PUBLISHED--17MAR70

PROCESSING DATE--11DEC70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERAMIC BINDER, ABRASIVE, OXIDE GLASS, SILICA, SODIUM OXIDE, CALCIUM OXIDE, BORON OXIDE, VANADIUM OXIDE, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1074

CIRC ACCESSION NO--AA0131621

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

UNCLASSIFIED

2/2   012
CIRC ACCESSION NO--AA0131621   UNCLASSIFIED   PROCESSING DATE--11DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE BINDER CONSISTS OF GLASS
AS THE MAJOR COMPONENT WHICH INCLUDES SIO SUB2, NA SUB2 O, CAO, AND B
SUB2 O SUB3.   TO REDUCE THE CONSUMPTION OF THE ABRASIVE, THE FOLLOWING
GLASS COMPN. IS RECOMMENDED: SIO SUB2 55-65, NA SUB2 O, 15-22, CAO 3-6,
B SUB2 O SUB3 7-12, AND B SUB2 O SUB5 5-10 WT. PERCENT.
FACILITY: UKRAINIAN SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENTS AND
SYNTHETIC EXTRAHARD MATERIALS.

UNCLASSIFIED

1/2   019
TITLE--OSCILLATIONS WITH MULTIPLE PERIODS IN NONLINEAR SYSTEMS --U--

AUTHOR--SMOLYAR, E.I.

COUNTRY OF INFO--USSR

SOURCE--UKRAINSKII MATEMATICHESKII ZHURNAL, VOL. 22, NO. 2, 1970, P. 214-221

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ORDINARY DIFFERENTIAL EQUATION, OSCILLATION, NONLINEAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0565

STEP NO--UR/0041/70/022/002/0214/0221

CIRC ACCESSION NO--AP0121237

L/2   019
CIRC ACCESSION NO--AP0121237   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   ANALYSIS OF A NONAUTONOMOUS SYSTEM
OF ORDINARY DIFFERENTIAL EQUATIONS DESCRIBING A NONLINEAR SYSTEM.   THE
AIM OF THE ANALYSIS IS TO DETERMINE THE EXISTENCE OF SOLUTIONS WITH
PERIODS THAT ARE MULTIPLES OF THE PERIOD OF THE RIGHT HAND SIDES OF THE
SYSTEM.   IT IS ASSUMED THAT A SOLUTION WITH A PERIOD EQUAL TO THE
EXCITATION PERIOD IS KNOWN, AND THAT THE RIGHT HAND SIDES OF THE SYSTEM
SATISFY THE CARATHEODORY CONDITIONS AND ARE LIMITED.   THE NONRESONANT
CASE IS EXAMINED.   THE SOLUTIONS UNDER CONSIDERATION ARE REGARDED AS
FIXED POINTS OF A NONLINEAR INTEGRAL HAMMERSTEIN OPERATOR COMPLETELY
CONTINUOUS IN THE SPACE OF PERIODIC FUNCTIONS.   THE NECESSARY CONDITIONS
FOR THE EXISTENCE OF SOLUTIONS WITH MULTIPLE PERIODS ARE OBTAINED FROM
THE PROBLEM OF THE BRANCHING POINT OF THE HAMMERSTEIN OPERATOR, THE
RESULTS BEING COUPLED TO THE FREQUENCY CHARACTERISTICS OF THE LINEAR
GROUP OF THE SYSTEM.   THE CONDITIONS FOR THE NONEXISTENCE OF SOLUTIONS
WITH MULTIPLE PERIODS TO THE INITIAL SYSTEM ARE ALSO DETERMINED.   THE
FREQUENCIES OF CERTAIN POSSIBLE SUBHARMONIC SOLUTIONS TO THE DUFFING
EQUATION ARE DETERMINED AS AN EXAMPLE.   FACILITY: LENINSGRADSKII
POLITEKHNICHESKII INSTITUT, LENINGRAD, USSR.

PROCESSING DATE--27NOV70

UNCLASSIFIED

USSR

SMOLYAR, L. I.

UDC: 51

"Method of Leading Elements for the General Problem of Linear Programming"

Moscow, Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. vopr. Vyp. 5 (Transactions of the Fourth Winter School on Mathematical Programming and Related Problems, No 5) 1972, pp 164-182 (from RZh--Matematika, No 1, 1974, Abstract No 1V481)

Translation: For realization of the simplex method, the expansion of a vector in terms of base vectors must be found. An algorithm is proposed for computing the expansion coefficients without complete determination of the inverse matrix. The algorithm is based on the separation of independent cycles from the nonzero elements of the base matrix and the expansion of the unit vectors in terms of these cycles by a generalization of an analogous technique for two-component problems (the vectors of which have no more than two coefficients unequal to zero). For the construction of cycles in each base vector, one of the nonzero elements is considered to be leading; a leading element must be in each row. In the construction of chains, motion along the column is connected 1/3 a transition from the nonzero element to the leading one. Expansion of

- 66 -

USSR

SMOLYAR, L. I., Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. vopr. Vyp. 5 1972, pp 164-182

the unit vector requires the computation and memory of intermediate character-istics, whose number depends on the number of cycles and nonzero elements of the base matrix (and is approximately equal to the product of the number of nonzero elements and the average number of cycles containing a fixed element). To expand a vector with nonzero coefficients in rows $i_1, \ldots, i_q$, q corresponding unit vectors must be expanded, resulting in q rows of the inverse matrix. Thus, economy of memory in the proposed algorithmization must be expected as compared to the algorithm of the inverse matrix in problems with very infrequent matrices close to two-component, where the number of cycles is small and each vector has a small number of nonzero elements.

It is noted that a similar algorithmization is possible for finding resolving factors. However, solution of the corresponding system of equations will be connected with the expansion of all unit vectors for each vector in the rows of the base matrix: i.e., with complete computation of the inverse matrix. (This can be avoided by introducing the additional limit

2/3

$$x_0 = \sum_j c_j x_j$$

USSR

SMOLYAR, L. I., Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. vopr.
Vyp. 5, 1972, pp 164-182

and transferring to this specific function x_0; however, the number of cycles formed then increases). Explanation of the algorithm is purely formal, without clarification of the significance of its content. S. Lebedev.

- 67 -

3/3

USSR

SMOLYAR, L. I.

"The Transport Problem with Limitations on Throughput Capacity"

Nauch. tr. Mosk. In-t. Nar. Kh-va. [Scientific Works of Moscow Institute of the Economy], 1972, No 101, pp 127-150 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V680 by S. Lebedev).

Translation: For the following transport problem:

$$\min\left\{\sum_{i,j}(c_{ij}x_{ij}+d_{ij}y_{ij}) + \sum_{i}(c_{io}x_{io} + d_{is}z_{io}) + \right.$$

$$\left. + \sum_{j}(c_{oj}x_{oj}+d_{oj}z_{oj})\right\},$$

$$\sum_{j}x_{ij}-x_{io}+z_{io}=\alpha_{i},$$

$$\sum_{i}x_{ij}-x_{oj}+z_{oj}=b_{j},$$

$$x_{ij}+y_{ij}=r_{ij},$$

$$x_{ij}\geqslant 0,\ x_{oj}\geqslant 0,\ x_{io}\geqslant 0,\ z_{oj}\geqslant 0,\ z_{ic}\geqslant 0,$$

the structure of the basis graph is described and algorithmic rules are presented, utilizing the specifics of this structure in the solution of the problem by the method of potentials.

1/1

- 51 -

UNCLASSIFIED

TITLE--THE EFFECT CF SCCT DUST ON THE MAXILLCDENTAL SYSTEM (CLINICO PROCESSING DATE--17JUL7*
    EXPERIMENTAL RESEARCH) -U-
AUTHOR--SMOLYAR, N.YA., YARCSLAVSKIY, V.YE.

CCUNTRY CF INFC--USSR

SOURCE--STCMATCLCGIYA, 1970, VOL 49, NR 1, PP 17-20

DATE FLBLISHEC-------7C

SUBJECT AREAS--BIOLCGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MCUTH, INDUSTRIAL HYGIENE

CCNTRCL MARKING--NO RESTRICTIONS

DCCUMENT CLASS--UNCLASSIFIEC
PROXY REEL/FRAME--1979/0678
                              STEP NC--UR/C511/70/049/C01/0017/0020
CIRC ACCESSICN NC--APCC47183
                    UNCLASSIFIED

Acc. Nr: AP0047183

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 17-20

Ref. Code: UR 0511

Smolyar, M. Ya.; Yaroslavskiy, V. Ye.
THE MAXILLODENTAL SYSTEM (CLINICO-EXPERIMENTAL RESEARCH) — THE EFFECT OF SOOT DUST ON

S u m m a r y. The authors commits to paper the results of investigations of the state of the oral cavity in 300 workers of a soot plant and in 300 persons not engaged in shops with occupational noxious factors. In workers of the soot plant affections of the oral mucosa and parodontium occur 2—3 times more frequently than in the control group and depend on the length of the service record.

REEL/FRAME

19790678

DI 2

TITLE--DIPHENYLAMINE REACTION OF THE ORAL CAVITY IN PATIENTS SUFFERING FROM RHEUMATISM AND SIALIC ACID CONTENT IN PATHOLOGICAL FOCI -U-

AUTHOR--SMOLYAR, N.I.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 32-34

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RHEUMATIC DISEASE, DIAGNOSTIC DRUG, BENZENE DERIVATIVE, AMINE DERIVATIVE, ORGANIC ACID, ORAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0094

CIRC ACCESSION NO--AP0120794

STEP NO--UR/0511/70/049/003/0032/0034

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120794   UNCLASSIFIED   PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SUMMARY. IN ORDER TO DETERMINE
THE INFLUENCE OF PATHOLOGICAL FOCI OF THE ORAL CAVITY ON THE RHEUMATIC
PROCESS ACTIVITY 138 PATIENTS WITH RHEUMATISM WERE EXAMINED. THE
DIPHENYLAMINE REACTION AND SIALIC ACID CONTENT SERVED AS BIOCHEMICAL
INDICES OF THE ACTIVITY OF THE DISEASE. HIGHER INDICES WERE OBSERVED IN
PATIENTS SUFFERING FROM ACTIVE RHEUMATISM WITH PERIAPICAL CHANGES.
DURING THE IMMEDIATE DAYS AFTER SURGICAL INTERVENTION ON INFECTIOUS
INFLAMMATORY FOCI OF THE ORAL CAVITY THE SIALIC ACID CONTENT AND
DIPHENYLAMINE INDEX INCREASED. ON THE 10-12TH POSTOPERATIVE DAY THE
ABOVE MENTIONED INDICES NORMALIZED.   FACILITY: KAFEDRA
TERAPEVTICHESKOY STOMATOLOGII I KAFEDRA FAKUL'TETSKOY TERAPII L'VOVSKOGO
MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC: 621.317.733

BUDNITSKAYA, Ye. A., NOVIK, A. I., SMOLYAR, Yu. A., TUCHIN, R. D., FESHCHEN-KO, N. A., KHAZANOV, V. M.

"Some Circuits for Temperature Compensation of AC Bridges"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 19-21 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A351)

Translation: The authors discuss the general principles of temperature compensation of AC bridges. A simplified transformer bridge circuit with temperature compensation of the reference specimen is given by way of example. Two illustrations. N. S.

1/1

- 83 -

UDC 669.14

USSR

SMOLYARENKO, D. A., KAPUSTIN, K. A., SEMENOV, Yu. N., D'YAKONOVA, V. S. and ALYMOV, A. A.

"Investigation and Modern Production of Quality Low-Carbon Nonaging Steel for Cold Rolling, in High-Capacity Martin Furnaces"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 92-101

Translation of Abstract: Results are presented of an investigation of test smeltings of A8FKP steel. The most promising way of improving homogeneity of low-carbon nonaging steel, the surface quality and the complex of physico-chemical properties, including its propensity to aging is the deoxidation of the steel in a ladle by ferrovanadium and electric furnace ferromanganese. 5 figures, 1 table, 6 references.

1/1   - 44 -

USSR   UDC 669.187.046.51

KIRICHENKO, I. D., SOSIPATROV, V. T., and SMOLYARENKO, D. A., Central
Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin
(TSNIICHM); Cherepovets Metallurgical Plant

"Complex Alloys for Steel Deoxidation"

Moscow, Izvestiya Vysshikh Uchebnych Zavedeniy, Chernaya Metallurgiya, No 1,
1971, pp 61-63

Abstract: The objective of this study was to determine both the composition
and specifications for storage-stable aluminum-manganese alloys for use in
steel deoxidation. Test data on specimens have shown that aluminum-manganese
alloys melted with primary aluminum (> 99% Al) and $Mn2$ manganese metal
(>93.0% Mn) containing not more than 27% or more than 50% Al were storage
stable. In order to lower element liquation in alloys, it is necessary
that the temperature of the well-stirred melt, prior to pouring, exceed
that of the liquidus by a maximum of 100°C. It is suggested that aluminum-
manganese alloys containing 27% Al and not more than 6% Fe be poured at
about 1300°C and those with 54% Al — at 1100°C. As compared to aluminum-
deoxidized steel in either the ladle or in the ingot mold, steel deoxidized
with aluminum-manganese alloy in the ladle is more completely deoxidized,
1/2

USSR

KIRICHENKO, I. D., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya
Metallurgiya, No 1, 1971, pp 61-63

has fewer nonmetallic inclusions, features higher plasticity, excels in
homogeneity of composition and has constant mechanical properties over a
wide range of melts and ingots. The steel has a higher yield of both
usable metal and high-grade metal products.

2/2

USSR   UDC 669.18.046.554

KIRICHENKO, I. D., SOSIPATROV, V. G., SMOLYARENKO, D. A., and
SEMENOV, YU. N.

"Production of Manganese-Aluminum Alloy, Stable During Storage,
and Its Application for Deoxidation of Low-Carbon Steel Outside
the Furnace"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -
Collection of Works), No 75, Metallurgiya Press, 1970, pp 84-88

Translation: Manganese-aluminum alloys produced from primary
aluminum (99% Al) and metallic type Mn_2 manganese (over 93% Mn),
containing not over 27% or over 50% aluminum have long-term
storage qualities.
        Homogeneity and decreased liquation of the alloys is pro-
vided by careful mixing and pouring at temperatures 40-60° above
the liquidus point of the alloy into massive molds.
        The use of manganese-aluminum alloy for deoxidation of
low-carbon non-aging steel outside the furnace increases the
homogeneity of the chemical composition and constancy of pro-
perties from melt to melt and ingot to ingot; higher purity than
1/2

77

USSR

KIRICHENKO, I. D., et al., Proizvodstvo Chernykh Metallov, No 75, Metallurgiya Press, 1970, pp 84-88

that of steel deoxidized by aluminum in the mold is characteristic. 2 figures; 1 table; 1 biblio. ref.

2/2

1/2   013   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--RELIABILITY OF SYSTEM WITH LOAD MIXED VARYING RESERVE -U-

AUTHOR---SMOLYAROV, A.M.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 2, PP 143-150

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--RELIABILITY ENGINEERING, AUTOMATIC CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1910   STEP NO--UR/0103/70/000/002/0143/0150

CIRC ACCESSION NO--AP0054711
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0054711
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE OF THE POSSIBLE METHODS OF THE
  RESERVATION OF A SYSTEM BY A LOAD MIXED VARYING RESERVE IS CONSIDERED.
  THERE ARE GIVEN THE CORRELATIONS ALLOWING TO DETERMINE THE QUANTITATIVE
  CHARACTERISTICS AND THE IMPROVEMENT OF THE RELIABILITY OF THE SYSTEM
  RESERVED WHICH IS NOT RESTOTED IN THE PROCESS OF ITS FUNCTIONING.

UNCLASSIFIED

USSR

KULESHOV, S. P., MATVEYEV, V. A., SISAKYAN, A. N.; and SMONDYREV, M. A.

"Operator Method for Solving Quasi-Potential Equations, and the Concept of Rectilinear Paths at High Energies"

Abstract: An operator method is proposed for finding approximate solutions for quasi-potential equations. The formula for the latter is given. It is noted that this method is sufficiently general and can be applied to other equations in quantum field theory. The approximate solution thus obtained can be used for finding the asymptotic behavior of dispersion amplitudes in the limit of high energies and fixed impulse transfer; it can also be used for developing a regular procedure for finding corrections for the chief asymptotic term. The final section of the article indicates the connection between the operator method and functional integration methods in quantum field theory. It is stressed that, at high energies, the method is the realization of the rectilinear path concept and can be applied to the investigation of various elastic and inelastic dispersion processes. The authors express their
1/2

USSR

KULESHOV, S. P., et al, Teoreticheskaya i Matematicheskaya Fizika,
No 3, 1973, pp 325-331

gratitude to N. N. Bogolyubov, M. K. Polivanov, and A. N. Tavkhe-
lidze for their advice and comments.

2/2

- 105 -

USSR

SMORCHKOV, A. P., TIKHOMIROVA, Z. M., SHVARTSMAN, M. N., and KARPOVA, G. V.,
8th Municipal Childrens' Hospital and Virological Laboratory of the Sverdlovsk
Rayon Sanitary Epidemiological Station, Moscow

"The Use of Anti-Influenza Gamma-Globulin in Comprehensive Treatment of In-
fluenza in Children"

Translation: This is a report on the results of using anti-influenza gamma-
globulin in comprehensive treatment of laboratory-confirmed A2 influenza in 53
children hospitalized during the 1969 epidemic outbreak. Depending on the age
and severity of the disease, the patients received one, two, or three doses of
anti-influenza gamma-globulin two or three times in the first days of the
disease. The moderately severe, catarrhal form of influenza was prevalent.
Hypothermia lasted mostly 1-2 days. In most patients, catarrhal signs and
bronchitis subsided on the 5th to 15th day of the disease. In 35 patients,
influenza was complicated by pneumonia (mostly in the localized, nontoxic form)
which subsided usually on the 13th day. The effectiveness of the comprehensive
therapy was evidenced by the absence of septic complications and lethal outcomes.

1/1

USSR   UDC 621.385.6

SHESTOPEROV, A.N., SNOPKO, K.N.

"Approximate Computation Of The Efficiency Of Bunchers Of Hybrid Type O Devices"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology -- Collection Of
Works), Saratov, 1970, pp 7-13 (from RZh--Elektronika i yeye primeneniye, No 6, June
1970, Abstract No 6A131)

Translation: By the approximate integration of a system of equations for a traveling-
wave tube as applied to a klystron, expressions are obtained for the phase and
velocity of electrons in parts of the drift. The current of the first harmonic is
computed for a 3-cavity buncher. An approximate formula is obtained for the
"indicator quality" of an n-resonator buncher. Summary.

1/1

USSR   UDC: 621.396.69:621.318(088.8)

GAVRILOV, V. M., SMORGONSKAYA, A. I., KANASHINSKIY, Yu. A., Novocherkassk
Permanent Magnet Plant

"A DC Electromagnet"

USSR Author's Certificate No 259274, filed 23 Aug 68, published 24 Apr 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V440 P)

Translation: This Author's Certificate introduces a DC electromagnet which
contains a magnetic circuit with pole piece, a permanent magnet, and a mag-
netizing coil connected to a source of direct current and used to control
the magnitude of the magnetic field intensity in the working gap. In order
to reduce the magnetizing power, the magnetizing coil is placed on a mag-
netically soft sleeve which covers a permanent magnet equipped with a pole
piece.

1/1

USSR

UDC: 621.315.592

KOLOMIYETS, B. T., LEBEDEV, E. A., and SMORGONSKAYA, E. A.

"The Mechanism of Breakdown in Chalcogenidic Glasses"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2073-2075

Abstract: Noting that some experimental data in the electrical be-
havior of layers of chalcogenidic glass differ from conclusions of
the theory of thermoelectronic breakdown, the authors offer addi-
tional data on the subject of breakdown in this type of material
in the form of curves for the voltage in the breakdown field and
the field itself as functions of the temperature. These curves
were obtained by measurements of thick layers of the material, with
the composition $Si_{1.2}Ge_{1.0}As_{3.0}Te_{4.8}$, in which thermal breakdown
was observed at room temperature and constant voltage. The mea-
surements were made in the temperature interval of 130 to 330° K,
on specimens 60 and 35 μ thick. The curves show that thermal
breakdown becomes electronic breakdown with reduced power dissi-
pation at low temperatures. It is also determined that the break-
down field is about the same for thin as for thick layers when
measured at low temperatures and short pulses.
1/1

- 110 -

AGEYEV, D. V., GLEBOVICH, G. V., LEZIN, YU. S., MALANOV, V. V., MORUGIN, L. A.,
SMORGONSKIY, V. YA.

"Gor'kiy Polytechnic Institute"

Abstract: A review of the scientific research work performed by the radio
engineering department of Gor'kiy Polytechnic Institute is presented. Abstracts
and bibliographic listings of many of the papers published by members of the
radio engineering faculty are presented. The fields of study covered include
improving the noise immunity of radio technical systems, the theory of pulse-
duration modulation and pulse amplification of low-frequency electrical oscil-
lations, improvement of the speed of pulse devices, automatic phase control
and wave guide theory, and utilization of the research results in the training
process. Specific lecture courses at the university in which the scientific
research papers are used are listed.

1/1

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RAYEVSKIY, S. B., SMORGONSKIY, V. Ya.

"Analysis of the Dispersion Characteristics of an Elliptical Waveguide With a Dielectric Rod for He_{11}^e Wave"

Abstract: This paper investigates the dispersion properties of an elliptical waveguide with confocal dielectric rod for the HE_{11}^e mode. The dispersion curves calculated for such a waveguide are compared with the dispersion characteristics of a waveguide with coaxial rod. It was found that at firly high ξ_1, just as in circular waveguides, the dispersion curves have a two-valued section at certain values of the parameter a_1/a_2 (where a_1 and a_2 are the semimajor axes of the rod and shield), i. e. there is anomalous dispersion.

1/1