

USSR

UDC 621.396.6-181.5

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NAZAROV, G. V., SOKOLOV, A. V., KOZHEVNIKOV, A. P., SHANOV, A. M., NIKITIN, V. G., SAFONOV, V. A., SEREGIN, V. P., BASHARIN, V. I.

"Development of Equipment for Assembling Integrated Circuits by Welding with Pulsed Indirect Heating and Ultrasound"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering. Scientific and Technical Collection. Microelectronics), 1970, vyp. 3 (24), pp 70-76 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4V287)

Translation: A study was made of the advantages of welding by pulsed indirect heating and ultrasonic welding when assembling microcircuits. The technical characteristics of the developed equipment and the structural design of the operating tool are presented. The results of experimental operation of the devices are discussed.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--INTERFERENCE FREE OPERATION OF AN OPTIMAL BINARY RECEIVER FOR DISCRETE SIGNALS UNDER CONDITIONS OF NONIDEAL SYNCHRONIZATION -U-

AUTHOR--(G2)-SVIRIDENKO, S.S., SEREGIN, Y.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 2, 1970, PP 18-23

DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL RECEPTION, PULSE SIGNAL, SIGNAL INTERFERENCE, INTERFERENCE IMMUNITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1285

STEP NO--UR/0108/70/000/002/0018/0023

CIRC ACCESSION NO--AP0123244

UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0123244

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE AUTHORS STUDY OPTIMAL
RECEPTION OF RECTANGULAR PULSE AND PSEUDORANDOM SEQUENCE TYPE DISCRETE
SIGNALS UNDER CONDITIONS OF NONIDEAL SYNCHRONIZATION. RELATIONSHIPS
ARE OBTAINED FOR THE AVERAGE PROBABILITY OF ERROR AND FOR THE OPTIMAL
THRESHOLD.

UNCLASSIFIED

175 014 UNCLASSIFIED PROCESSING DATE--0000170
TITLE--MODIFICATION OF CONVECTIVE CLOUDS -U-
AUTHOR--(03)--GAYVORONSKIY, I.I., ZATSEPINA, L.P., SEREGIN, YU.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,
VOL VI, NO 3, 1970, PP 252-258
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--CUMULUS CLOUD, AEROSOL, WEATHER MODIFICATION, CLOUD SEEDING,
THUNDERSTORM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1991/0715 STEP NO--UR/0362/70/006/003/0252/0258
CIRC ACCESSION NO--AP0110449
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110449

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF EXPERIMENTS FOR MODIFICATION OF WELL DEVELOPED CUMULUS CLOUDS BY AEROSOLS OF INSOLUBLE SUBSTANCES. THE GREATEST EFFECT WAS OBTAINED WHEN USING HYDROPHILIC PARTICLES. MOST OF THE EXPERIMENTS WERE MADE IN INDIVIDUAL CLOUDS OR IN MASSES OF DEVELOPING AIRMASS AND IRONTAL CONVECTIVE CLOUDS IN THE STAGES CB AND CB CAPIL. THE VERTICAL THICKNESS OF THE CLOUDS SUBJECTED TO MODIFICATION VARIED FROM 5 TO 10 KM. THE TOPS OF THESE CLOUDS ATTAINED 7,000-12,000 M WHERE THE AIR TEMPERATURE WAS -20--58DEGREESC. THE REAGENT USED WAS A COARSE DISPERSE AEROSOL OF PORTLAND CEMENT WHOSE SPECIFIC SURFACE WAS 4,000 CM PRIME2-G. THE EXPERIMENTS CONTINER. EACH UNIT HELD ABOUT 10 KG OF REAGENT. THE CONTROL PANEL WAS ARRANGED SO THAT BETWEEN 10 AND 400 KG OF REAGENT COULD BE DUMPED AT ONE TIME. A POSITIVE RESULT WAS OBTAINED FROM THE SEEDING OF 54 OF 55 THUNDERSTORM CLOUDS WITH GREAT VERTICAL DEVELOPMENT. AFTER SEEDING THE CLOUDS CCEASED FURTHER DEVELOPMENT AND THE TOPS GRADUALLY BEGAN TO SETTLE. THEN THE CLOUD ACQUIRED A FIBROUS STRUCTURE AND BEGAN TO BE STRATIFIED INTO SMALL PARTS WHICH EVAPORATED WITHOUT THE FALLING OF SIGNIFICANT PRECIPITATION. THE CLOUD WAS DISSIPATED WITHIN 7 TO 20 MINUTES. THE CRYSTALLINE PART OF THE CLOUD PERSISTED IN THE FORM OF A LAYER AND THE ANVIL REQUIRED SEVERAL HOURS FOR DISAPPEARANCE. DIRECT COMPARISON OF RESULTS OF MODIFYING SUCH CLOUDS WITH INSOLUBLE SUBSTANCES AND CRYSTALLIZING REAGENTS (AGI OR SOLID CO SUB2) SHOWS THAT THE PROCESS OF CLOUD DESTRUCTION OCCURS MORE RAPIDLY WITH THE INTRODUCTION OF AN AEROSOL OF INSOLUBLE REAGENTS.

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CERC ACCESSION NO--AP0110449

ABSTRACT/EXTRACT--THE EFFECTIVENESS OF THE LATTER IN THE DESTRUCTION OF THUNDERSTORM CLOUDS IS ALSO CONFIRMED BY RADAR OBSERVATIONS. AFTER SEEDING THERE WAS AN APPRECIABLE DECREASE AND THEN DISAPPEARANCE OF RADIO ECHOES.

FACILITY: CENTRAL AEROLOGICAL OBSERVATORY.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--POSSIBILITY OF LOWERING THE SYNCHRONIZATION ACCURACY REQUIREMENTS
FOR OPTIMAL RECEPTION OF DISCRETE SIGNALS -U-
AUTHOR--(G2)--SEREGIN, YU.V., SVIRIDENKO, S.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNKA, VOL. 25, APR. 1970, P. 101-103

DATE PUBLISHED---APR70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL RECEPTION, COMMUNICATION SIGNAL, RADAR SIGNAL, SIGNAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRAME--3006/C309

STEP NO--UR/0106/TC/025/000/0101/0103

CIRC ACCESSION NO--AP0134113

UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0134113

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A METHOD OF LOWERING THE STRINGENT SYNCHRONIZATION REQUIREMENTS IN THE OPTIMAL RECEPTION OF DISCRETE PSEUDORANDOM SHORT DURATION LARGE BASE SIGNALS FOR COMMUNICATIONS OR RADAR PURPOSES. THE METHOD IS DEVELOPED ON THE BASIS OF THE RESULTS OF AN ANALYSIS OF AN OPTIMAL RECEIVER OF DISCRETE SIGNALS OPERATING UNDER NONIDEAL SYNCHRONIZATION CONDITIONS.

UNCLASSIFIED

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UDC 621.391.14

SVIRIDENKO, S. S., SEREGIN, YU. V.

"Output Voltage Determination in Pseudo-Random Signal Correlation Processing"

Moscow, Radiotekhnika, Vol 25, No 9, 1970, pp 1-3

Abstract: Pseudo-random signals are ordinarily received by means of a matched filter. The two methods usually used for determining the filter output voltage when the input signal is distorted by the line system involve mathematical difficulties, often to the point where recourse to an electronic computer is necessary. The first of these methods uses the Fourier integral, while the second is based on the use of the Duhamel integral. The author of this article proposes a new method, also using the Duhamel integral, which avoids the difficulties in either of the two earlier methods. To demonstrate how his solution is applied, he uses the example of the output voltage of a filter matched with an undistorted m -sequence of 31 elementary signals of the form -1-1-1-11-11-1111-111-11-111111-1-111-11-1-11 if, before the filter, the signal is put through a linear system. A graph showing the output signal as found by the method of the article and the signal plotted from the auto-correlation function of the undistorted signal for the m -sequence shows good correlation between the two.

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USSR

SEREGINA, A. R.

UDC 621.396.677

"Method for Calculating the Near Field of a Vibrator Located Near an Ideal Conducting Plane"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp.119, pp 115-127 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B4)

Translation: The method employed in the given work differs from the traditional method in that the integral equation is not comprised with respect to the current in the antenna, but with respect to the normal component of the electric vector whose value is determined by the electric strength of the emitter. It is assumed that the vibrator is a body of revolution of arbitrary form with an axis which is parallel to the metallic plane. Original article: five bibliographic entries. N.S.

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USSR

UDC 621.396.677

ZAYTSEV, A. S., SEREGINA, A. R., and KHODATAEV, YU. V.

"Experimental Study of the Near Field of Wire Antennas"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp.119, pp 128-135 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B5)

Translation: The authors study the near field of vibration type and gamma type, folded dipole antennas. The method of direct field measurement and the method of modulated reemission were used. The measurement equipment is described. An analysis of the obtained results shows that from the point of view of breakdown, the dangerous region is the one adjoining to the face of the vibrator. Original article: five illustrations and three bibliographic entries. N.S.

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- 4 -

172 051 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF NUCLEAR RADIATION ON THE PHYSICOMECHANICAL PROPERTIES OF
PAINT ENAMEL COATINGS -U-
AUTHOR--KNYAZEV, V.K., NOVIKOV, V.S., IZOTOV, G.T., GLUSHCHENKO, V.M.,
SEREGINA, G.P.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1) 42-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PROTECTIVE COATING, PLASTIC COATING, RADIATION EFFECT, GAMMA
IRRADIATION, HARDNESS, POLYVINYL CHLORIDE, EPOXY RESIN, ENAMEL, AMINE
DERIVATIVE, RADIATION RESISTANT PLASTIC/(U)GFO20 UNDERCOATING, (U)AGIOS
UNDERCOATING, (U)PF220 ENAMEL, (U)NK06 NITRATED GLYPTAL RESIN, (U)EP74T
EPOXY MELAMINE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0549 STEP NO--UR/0303/70/000/001/0042/0044
CIRC ACCESSION NO--AP0107154
UNCLASSIFIED

2/2 051

CIRC ACCESSION NO--AP0107154

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STABILITY WAS STUDIED OF MULTILAYERED COATINGS AGAINST GAMMA IRRADN. AT DOSES OF SMALLER THAN OR EQUAL TO 100 MEGARADS APPLIED AT 10 PRIMES R-HR. THE COATINGS WERE COMPOSED OF GF-020, FL-03K, OR AG-10S UNDERCOATINGS AND 1-2 COATS OF THE FOLLOWING ENAMELS: PF-220 (POLYPHTHALATES) WITH ML-25 (MELAMINE ALKYD RESIN), 2062F GLYPTAL RESIN, NKO-6 (NITRATED GLYPTAL RESIN), EP-74T (EPOXY-MELAMINE RESIN), OR KHSE-23 (CHLORINATED POLY(VINYL CHLORIDE) RESIN). NONE OF THESE COATINGS WITHSTOOD 100 MEGARAD DOSES. THE MOST RESISTANT, AS DETD. BY MEASURING HARDNESS, ELASTICITY, AND IMPACT STRENGTH BEFORE AND AFTER THE IRRADN., WERE GLYPTAL RESINS AND PF 220.

UNCLASSIFIED

1/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70
IN THE PRESENCE OF WATER

TITLE--AGING AND CORROSIVE ACTION OF TURBINE OILS

AUTHOR--(04)--IVANOV, K.I., LUZHETSKIY, A.A., ALEKSANDROV, A.N., SEREGIN,
L.SH.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(2), 62-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL STABILITY, TURBINE OIL, CHEMICAL COMPOSITION,
CORROSION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2073

STEP NO--UR/0096/70/017/002/0062/0067

CIRC ACCESSION NO--AP0127446

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COM. TURBINE OILS (CONTG. 0.1 OR 0.8PERCENT S) UNDERGO SUBSTANTIAL CHANGES AS A RESULT OF CONTACT WITH H₂O AT 90DEGREES, E.G., THE ACID NO. INCREASES (FROM 0.0 TO 0.2 OR 0.8 MG KOH-G, FOR THE OILS CONTG. 0.8 OR 0.1PERCENT S, RESP.), THE OILS BECOME CORROSIVE WITH RESPECT TO MANY METALS, AND METALLIC SOAPS ARE FORMED (AND DISSOLVE IN THE OIL) UPON CONTACT WITH METALS; SUCH PHENOMENA ARE RESPONSIBLE FOR THE AGING OF THE OILS IN ACTUAL SERVICE. THE CORROSION RATE OF STEEL IN SUCH AGED OILS, WITH INITIAL S CONTENTS OF 0.1 OR 0.8PERCENT, REACHES 42.87 OR 151.81 G-M PRIME2 (THE TEST DURATION WAS 70 HR IN THE LOW S AND 304 HR IN THE HIGH S OIL), RESP. THE HIGHER CORROSION RATE IN THE AGED HIGH S OIL, IN SPITE OF ITS LOWER ACID NO., IS ATTRIBUTED TO THE FORMATION OF LARGER AMTS. OF WATER SOL. CORROSIVE ACIDS; THE SLOWER OXIDN. OF THE HIGH S OIL IS ATTRIBUTED TO THE PRESENCE OF ANTIOXIDANT ADDITIVES. THE CORROSION RATES OF NONFERROUS METALS (BRONZE, BRASS, BABBITT) IN THE AGED OILS IS QUITE LOW, E.G., BETWEEN 1.3 AND 8 G-M PRIME2, FOR THESE TEST TIMES. THE ADDN. OF AN OXIDN. INHIBITOR (IONOL) TO THE LOW S OIL DID NOT REDUCE THE CORROSIVENESS OF THE OIL AFTER AGING, IN SPITE OF A SUBSTANTIAL DECREASE IN THE DEG. OF OXIDN. OF THE OIL. FACILITY: VYSES. TEPLOTEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EQUILIBRIUM ADSORPTION OF VAPORS FROM SUBSTANCES WITH RELATIVELY
LARGE MOLECULES. 1. METHODS FOR DETERMINING ISOTHERMS OF ADSORPTION OF
AUTHOR--(04)-NIKOLAYEV, K.M., DUBININ, M.M., POLYAKOV, N.S., SEREGINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 761-7

DATE PUBLISHED-----70

S

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS ADSORPTION, ISOTHERM, DECANE, BENZENE, ACTIVATED CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0993

STEP NO--UR/0062/70/000/004/0761/0767

CIRC ACCESSION NO--AP0138021

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--A0138021

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

ABSTRACT. ADSORPTION ISOTHERMS WERE REPORTED FOR DECANE, C SUB6 H SUB6 AND ME SUB3 CPH ON ACTIVATED C SPECIMENS FROM ROOM TEMP. TO MINUS 195DEGREES. THE WT. DETG. APP. FOR SUCH DETN. IS DESCRIBED IN DETAIL. THE RELATIVELY POORLY VOLATILE SUBSTANCES IN SUCH ADSORPTION TEND TO DISPLACE FROM THE UNHEATED APP. WALLS ANY FOREIGN MATERIALS THAT HAD BEEN PREVIOUSLY ADSORBED THERE AND AS A RESULT, THE ASCENDING AND THE DESCENDING BRANCHES OF THEIR ISOTHERMS ARE NOT COINCIDENT, UNDER SUCH CONDITIONS.

FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 541.183

S

DUBININ, M. M., NIKOLAYEV, K. M., POLYAKOV, N. S., and SEREGINA,
N. I., Institute of Physical Chemistry, Moscow, Academy of Sciences
USSR

"Study of Equilibrium Vapor Adsorption of Substances with Relatively
Large Molecules
Communication I. Methods for Determination of Isotherms of Vapor
Adsorption of Substances with High Boiling Points"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4,
Apr 1970, pp 761-767

Abstract: An apparatus and methodology for determination of the ad-
sorption and desorption isotherms of nonvolatile vapors at normal
temperatures is described. The method consists of evacuation of the
adsorbent used at 350-400° for 5-6 hours, cooling to room temperature
followed by "washing" of the system with vapors of the material to be
adsorbed, to remove from the system gaseous impurities which are ad-
sorbed to a lesser degree. Then the adsorbent is again evacuated as
before, until the original weight is obtained. In such a system the
adsorption isotherms show an identical adsorption and desorption
course.

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- 5 -

USSR

UDC 539.4

SERENKO, A. N.

"On the Problem of the Effect of Stress Concentration on the Brittle Strength of Steel"

Sb. nauch. tr. Zhdanov. metallurg. in-t (Collection of Scientific Works. Zhdanov Metallurgical Institute), 1972, No. 17, pp 12-18 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8V916)

Translation: The results of an experimental study of the effect of reduced temperature on mechanical properties under stretching of samples of two types of steel in a state of annealing are presented. The steels were low-carbon (3 mm thick) and 30KhGSA steel (2 mm thick). The tests were conducted on smooth samples and samples with lateral hyperbolic cuts. It is concluded that the transition temperature of brittle breakdown under a plane stress state at any value of the stress concentration coefficient coincides with the similar characteristic for a linear stress state. It is noted that the null plasticity temperature is independent of the presence and magnitude of stress concentrators. 5 ref. A. B. Kaplun.

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USSR

SERENKO, A. N.

UDC 539.374

"Effect of a Heterogeneous Deformed State on the Transition of a Metal to the Plastic Stage"

Sb. nauch. tr. Zhdanov. metallurg. in-t (Collection of Scientific Works. Zhdanov Metallurgical Institute), 1972, No. 17, pp 19-29 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8V359).

Translation: An experimental study of conditions for the rise of plastic deformation in plates with concentrators in the form of openings and deep cuts was conducted. Strain gages were attached to the surface of the sample in the minimal cross section at various distances from the edge of the concentrator to measure local deformations as a function of load. Low-carbon steel and ZOKhGSA steel in the delivery state and also steels annealed and hardened under a set regime were investigated. Values of the limiting load were found for which a load corresponding to a transition of the metal to the plastic state in the vicinity of the concentrators was applied. The limiting load was investigated as a function of the shape of the concentrators and the curvature of the cut. 9 ref. Yu. V. Suvorova.
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USSR

UDC 678.742.2-9

POPOVA, A. I., SERENKOV, V. I., and GEFTER, YE. I.,

"Radiation-Chemical Grafting of Organophosphorus Monomers Onto Polyethylene"
Moscow, Plasticheskiye Massy, No 11, 1971, pp 40-42

Abstract: The authors studied the radiation-chemical grafting of di(β -chloroethyl) ester of vinylphosphonic acid (vinyphos) onto polyethylene, as well as the principal regularities of the grafting process and properties of the graft copolymers. Unstabilized polyethylene film was used for grafting. Specimens underwent gamma irradiation from a Co-60 source. The following questions were studied: the effect of the nature of the solvent (in air) on the degree of grafting (the highest degree of grafting was found with the use of acetone); the effect of solution concentration, dose rate and film thickness on the yield of graft copolymer during irradiation of films immersed in an acetone solution of vinyphos; the effect of degree of grafting on the physicomechanical indices of film (35 microns thick) from polyethylene-vinyphos copolymer. It was found that the quantity of graft copolymer is proportional to the concentration of vinyphos in acetone to 50 vol. percent, while a further increase in concentration does not affect the yield of graft copolymer. The yield of graft copolymer does not exceed 45-46 percent with an irradiation dose of 40 Mrad for films

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POPOVA, A. I., et al., *Plasticheskiye Massy*, No 11, 1971, pp 40-42

35 microns thick. The degree of grafting declines slightly with a film thickness of 70 microns and drops sharply with a thickness of 200 microns. The grafting process is evidently determined by diffusion of the monomer into the polymer. The quantity of graft vinylphos can be increased by the method of "successive" irradiation.

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- 94 -

USSR

UDC 678.742.4:66.018.86

TIKHOMIROVA, N. S., BOL'SHAKOV, N. I., SERENKOV, V. I.

"Effect of Additives on the Radiation Decomposition of Polyisobutylene"

Moscow, Plasticheskiye Massy, No 1, 1973, pp 18-19

Abstract: A study was made of the effect of certain organic additives on the decomposition of polyisobutylene under the effect of cobalt radiation in the presence of oxygen. Aromatic compounds with conjugated rings, phenols and aromatic thio-compounds in the form of especially pure reagents and chemically pure compounds were used as the additives.

On irradiation of polyisobutylene with effective additives (azobenzene, α -dinitrophenol and p-aminophenol) their protective effect varies as a function of the absorbed dose. With an irradiation dose of one mrad, the effectiveness of protecting the polyisobutylene is maximal, and with a further increase in the dose to 3 mrad the protection becomes weaker. The effect of the various investigated additives on radiolysis of polyisobutylene was analyzed leading to the following groupings: phenols (ionol, p-aminophenol, α -dinitrophenol) and azobenzene which protect the polymer chains from breaking in the presence of irradiation. Their protective functions are connected with deactivation of the active radiolysis products.

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USSR

UDC 678.84.019.86

BELOVA, V. V., PRIDACHINA, N. N., POPOVA, A. I., and SEREBKOV, V. I.
"Radiolysis of Polysiloxane Resin"

Moscow, Plasticheskiye Massy, No 3, 1971, pp 24-26

Abstract: Structural rearrangements occurring in solidified silicon organic resin under the influence of ionizing radiation were studied by IR spectroscopy, mass-spectroscopy, thermomechanical, and physicomechanical techniques. Polymethylsiloxane resin is formed by cohydrolysis of methyltrichlorosilane and dimethyldichlorosilane yielding cyclic polymers with siloxoloxane bonds. It was determined that radiation leads to further structuralization of already solidified polymer. This is due to the formation of new Si-O-Si bonds, methylene and ethylene bridges and changes in the cyclic structure pattern of the polymer. These polymers become more durable because of the disappearance of organic radicals and increase in the number of trimer cycles. Temperature increase during radiolysis enhances the rate and degree of these processes.

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USSR

UDC 669.781.053.28

SEREVRYAKOVA, T. I., and MAREK, E. V.

"Production of Borides by Borothermal Reduction of Metal Oxides in a Vacuum"

Metalloterm. Protsessy v Khimii i Metallurgii [Metallothermal Processes in Chemistry and Metallurgy — Collection of Works], Novosibirsk, Nauka Press, 1971, pp 78-84 (Translated from Referativnyy Zhurnal Metallurgiya, No 3, 1972, Abstract No 3G144 by the authors)

Translation: A brief review is presented of popular methods for the production of borides, the advantages of the borothermal method of production of borides are indicated, and works are studied which deal with the composition of gaseous B_2O_2 liberated during reduction of metal oxides by boron in a vacuum. Results are presented from thermodynamic calculation of the free energy and equilibrium temperatures of formation of borides by the alkali earth and transition metals in the reaction $MeO+B \rightarrow MeB_2+B_2O_2$. The basic results are presented from experimental studies of borothermal methods, and optimal modes for the production of transition metal diborides are presented. 3 figures; 2 tables; 15 bibliographic references.

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USSR

UDC: 534-8

SEREYKAYTE-YUOZONENE, L.

"Interferometric Method for Measuring the Speed of Ultrasound in Materials Found in the Condensed State"

Nauch. tr. vyssh. ucheb. zavedeniy LitSSR. Ul'trazvuk (Scientific Works of the Lithuanian VUZ; Ultrasonics) No 4, 1972, pp 113-118 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh595)

Translation: An interferometric method is considered for measuring the velocity of longitudinal and transverse waves in materials found in the condensed state when the specimen or chamber with the investigated material is in the form of a triangular prism. Curves of the reaction obtained by the interferometer are computed and experimentally plotted. Curves for the velocity of the longitudinal and transverse waves are plotted as functions of the frequency in polystyrol, the temperature in solutions of various concentrations of gelatin, and the corning time of beef. Author's abstract

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USSR

UDC 621.382.2

GONCHAROV, V. N., KLYUCHNIKOV, V. N., KRYLOV, L. N., LAVRISHIN, Yu. A.,
LONCHIN, M. A., SEREZHKIN, Yu. N., UCHAYKIN, I. G., and YAMASHKIN, Yu. M.

"Role of Microplasma Phenomena in Determining the Properties of Silicon
Avalanche Rectifiers"

Uch. zap. Mordovsk. un-t (Scientific Notes of Mordovskiy University), 1970,
Issue 82, pp 3-20 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971,
Abstract No 8B195)

Translation: The effect of microplasma phenomena on the characteristics of avalanche
rectifiers is considered. A model of the microplasma is presented and the reasons
for formation of microplasma are considered. The distribution of microplasma in
avalanche rectifiers is presented for the area of the p-n junction and for breakdown
voltages. Means are considered for an increase of the breakdown energy of avalanche
rectifiers. Summary.

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UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--GROWTH OF THE NUMBER OF SWITCHED ON MICROPLASMAS IN SILICON
AVALANCHE DIODES -U-

AUTHOR--GREKHOV, I.V., SEREZHKIN, YU.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 611-13

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--AVLANCHE DIODE, SILICON DIODE, SOLID STATE PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0251

STEP NO--UR/0449/70/004/003/0611/0613

CIRC ACCESSION NO--AP0105325

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105325

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICRODIODES 0.8 MM IN DIAM. WERE PREPD. FROM PULLED AND FROM FLOATING ZONE REFINED AL DOPED SI WITH 5 TIMES 10 PRIME3 AND 4 TIMES 10 PRIME5 DISLOCATIONS-CM PRIME2, RESP. THE DEPTH OF THE P N JUNCTION WAS SIMILAR TO 80 MU. THE GROWTH OF THE NO., N , OF MICROPLASMAS WITH INCREASING VOLTAGE, V , FOLLOWED AN EXPONENTIAL LAW: N EQUALS $EXP(\alpha(V - V_{SUBO}))$, WHERE V_{SUBO} IS THE BREAKDOWN VOLTAGE OF THE 1ST MICROPLASMA, AND α IS A DIODE CONST. FOR N SMALLER THAN OR EQUAL TO 20, A DEVIATION FROM THIS LAW WAS OBSD.

UNCLASSIFIED

USSR

UDC 621.165-233.001.5

SEREZHKINA, L. P., KUZ'MIN, G. I.

"Load on Turbine Thrust Bearings During Transient Modes

"Kotel'n. i turbin. ustanovki energ. blokov" (Boiler and Turbine Installations of Power Units) Moscow "Energiya", 1971, pp 201-205 (from Referativnyy Zhurnal-Turbostroyeniye, No 10, Oct 71, Abstract 10.49.51)

Abstract: Results are presented of an experimental study on transient processes of axial forces carried out jointly at the All Union Institute of Heat Engineering (VTI) and the Khar'kov Turbo-generator Plant im. S.M. Kirov (KhTGZ). A load drop from a nominal down to 30% value, produces a short time load on thrust bearing of a K-300-2400 KhTGZ turbine, equal to 46 ton/sec, and 42 ton/sec for a K-200-130 turbine. The indicated load values being high, so it is necessary to check the load carrying capacity of power unit bearings in considering the problem of utilizing these turbines for sustaining synchronous stability of power systems. 5 figures.

1/1

- 116 -

USSR

UDC 621.039.5

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VOPOB'YEVA, V. G., D'YACHENKO, P. P., KUZ'MINOV, B. L., SERGACHEVA, A. I., SMIRENKINA, L. L.

"Recommended Power Dependence following from Analysis of the Energy Balance during Fission"

Tr. trekhstoron. Sov.-Bel'g.-Gollandsk. simpoziuma po nekotorym problemam fiziki bystrykh reaktorov (Works of the Three-Way Soviet-Belgian-Dutch Symposium on some Problems of Fast Reactor Physics), 1970, Vol 1, Moscow, 1970, D-24, pp 1-8 (from RZh-Elektrotehnika i energetika, No 7, Jul 71, Abstract No 7U137)

Translation: The dependence of the number of secondary fission neutrons $\bar{\nu}$ for Th^{232} , U^{235} , U^{238} formed under the effect of neutrons with an energy up to 6 megaelectron volts was established on the basis of analyzing a large number of experimental data. A formula is presented which establishes the energy dependence of $\bar{\nu}$. Experimental data on the fission energy of Np^{237} , U^{235} , Th^{232} , U^{238} under the effect of neutrons with an energy up to 6 megaelectron volts are presented. There are 2 illustrations and a 10-entry bibliography.

1/1

Organ and Tissue Transplantation

USSR

UDC 576.097

SHATALOVA, I. N., NASTOYASHCHAYA, N. N., ARTSIMOVICH, N. G., and SERGEL',
O. S., Scientific Research Laboratory of Experimental Immunobiology, Academy
of Medical Sciences USSR, Moscow

"Changes in the Peripheral Blood of Mice Upon Specific and Combined Sup-
pression of Transplantation Immunity"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 6, 1973, pp 1,450-1,452

Abstract: In experiments in which allotransplantation of skin patches to mice was performed, immunization of the recipients was carried out with unspecific immunosuppressors (antilymphocyte serum and cyclophosphamide) and with a specific antigen (viable cells of the spleen of donor mice). The antilymphocyte serum was obtained by immunizing rabbits with lymphoid cells of the mesenteric lymph nodes of mice. Suppression of the transplan-
tation immunity with the non-specific immunosuppressors (cyclophosphamide alone or in combination with antilymphocyte serum) was accompanied as a rule by leukopenia and particularly lymphocytopenia. On the other hand, induc-
tion of immunological tolerance by applying the specific antigen or by treating the recipients with the antigen in combination with the unspecific
1/2

USSR

SHATALOVA, I. N., et al., Doklady Akademii Nauk SSSR, Vol 210, No 6, 1973, pp 1,450-1,452

immunosuppressors resulted in a marked extension of the time of survival of the transplanted skin without significant changes in the composition of the blood.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE IMPORTANCE OF BOULEN'S DROP IN THE DIAGNOSIS OF LUNG CANCER -U-
AUTHOR--(03)-SERGEL, O.S., ADAMYAN, A.A., KACHKOV, A.P.
COUNTRY OF INFO--USSR S
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZOLOGIYA, 1970, NR 3, PP
12-15
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LUNG, CANCER, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0912 STEP NO--UR/0481/70/000/003/0012/0015
CIRC ACCESSION NO--AP0126571
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126571

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOULEN'S TEST IN 120 PERSONS WAS INVESTIGATED. THE LARGE COINCIDENCE OF THE RESULTS IN PATIENTS WITH CANCER AND HEALTHY PERSONS IN CONJUNCTION WITH THE TECHNICAL SIMPLICITY GIVES GROUNDS TO RECOMMEND BOULEN'S TEST AS AN ADDITIONAL ONE IN OBSCURE PERIPHERAL FORMATIONS IN THE LUNG, AS WELL AS IN DISPENSARY EXAMINATION FOR THE PURPOSE OF DETECTING ASYMPTOMATIC PERIPHERAL CANCER OF THE LUNG.

FACILITY: KLINIKO-DIAGNOSTICHESKAYA LABORATORIYA.

FACILITY: II KHIRURGICHESKOYE OTDELENIYE.

FACILITY: INSTITUTA

KHIRURGII IM. A. V. VISHNEVSKOGO, AMN SSSR, MOSKVA.

UNCLASSIFIED

172 036 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANOMALOUS DECAY OF A NONUNIFORM COLLISIONLESS PLASMA BEAM IN UHF
FIELD -U-
AUTHOR--SERGEYCHEV, K.F.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 4, PP 1157-1167
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA BEAM, PLASMA DECAY, NONUNIFORM PLASMA, PLASMA DENSITY,
RAREFIED PLASMA, DENSE PLASMA, ULTRAHIGH FREQUENCY, ELECTROMAGNETIC
FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/1718

STEP NO--UR/0056/70/058/004/1157/1167

CIRC ACCESSION NO--AP0106452

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106452

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANOMALOUS DECAY OF A NONUNIFORM COLLISIONLESS PLASMA BEAM INJECTED INTO A CIRCULAR WAVE GUIDE AND EXCITED BY AN H SUB01 MODE WAVE IN THE S BAND IS INVESTIGATED. ANOMALOUS DECAY IS FOUND TO BE A THRESHOLD EFFECT WITH RESPECT TO THE ELECTRIC FIELD STRENGTH OF THE APPLIED UHF FIELD. THE DEPENDENCE OF THE DECAY THRESHOLD ON PLASMA DENSITY IS FOUND. THE THRESHOLD DEPENDENCE IS COMPARED WITH THEORETICAL DEPENDENCE OF THE KINETIC AND PARAMETRIC INSTABILITY THRESHOLDS OF A NONISOTHERMAL PLASMA IN AN UHF FIELD; THESE INSTABILITIES COULD BE THE CAUSE OF HEATING AND DECAY OF THE PLASMA. QUALITATIVE CORRESPONDENCE OF THE DEPENDENCES FOR A RAREFIED PLASMA ($N-N$ SUB0 SMALLER THAN 0.8) IS DEMONSTRATED. THE REMAINING DISCREPANCY CAN BE EXPLAINED BY THE INFLUENCE OF THE PLASMA INHOMOGENEITY ON THE DECAY THRESHOLD MAGNITUDE. THIS IS CONFIRMED BY THE FACT THAT BETTER AGREEMENT WITH THE THEORY WAS OBTAINED FOR THE DECAY THRESHOLDS OF A WEAKLY INHOMOGENEOUS PLASMA BEAM IN AN UHF FIELD. ANOMALOUS DECAY OF A DENSE PLASMA (N SUBMAX-NO LARGER THAN 1) WAS INVESTIGATED BY MEANS OF A SURFACE WAVE EXCITED ON VIOLATION OF SYMMETRY OF INJECTION OF THE PLASMA BEAM INTO THE FIELD OF THE H SUB01 WAVE. IT IS SHOWN THAT A DENSE PLASMA PRACTICALLY DOES NOT PARTICIPATE IN THE ANOMALOUS DECAY PROCESS AND THAT IN THIS CASE DECAY OCCURS IN THE NONUNIFORM BOUNDARY PLASMA LAYER IN WHICH $N-N$ SUB0 SMALLER THAN OR SIMILAR TO 1.
FACILITY: FIZICHESKIY INST. IM. P. N. LEBEDEVA, AN SSSR.

UNCLASSIFIED

UDC 616.61-002.151-02

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KONIKOVA, R. Ye., Candidate of Biological Sciences; YELIGULASHVILI, R. K., Candidate of Medical Sciences; GAVRILYUK, B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

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JSR

AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9,
Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for *Leptospira* proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination with fluorescent antibodies. In the indirect hemagglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephrosonephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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- 41 -

SERGEYENKOV, B.N.

Case L

JPRS 40590

20 November 1973

DOC 533, 98-537-312.62

DISCUSSION OF A SUPERCONDUCTING STORAGE DEVICE THROUGH AN INVERTER

Article by V. V. ~~Amel'nikov~~, V. R. ~~Smekovish~~, O. V. ~~Perlov~~, H. S. ~~Sergeyenko~~, A. G. ~~Shubnikov~~, V. V. ~~Sychev~~, V. A. ~~Torva~~, and V. S. ~~Shoykhet~~; reported by ~~Amel'nikov~~, V. A. ~~Kirillin~~ on 16 June 1971; Moscow, ~~Ukhovny Akademii~~ Nauk SSSR, ~~Russkaya~~, Vol 2, 1971, published 9 June 1970, pp 320-323.

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Superconductive inductive power storage devices are promising for use in a number of scientific and engineering fields as emergency reserves of electric power, power sources for covering peak loads in power systems, and as high power electric pulse sources.

The amount of energy stored in this type of a device can be quite large. In particular, a storage device for covering peak loads of 1015 joules is discussed. As compared to other possible methods, superconductive storage devices have a number of technical and economic advantages for storing relatively high energies. Frequently, a necessary condition or for transferring the energy stored in the storage device is the use of an inverter. There is no information at present on any attempts for the practical realization of a process for transferring the energy from a superconductive storage device to an electric power system.

The inversion of energy stored in a superconductive solenoid can be accomplished at a constant average value of the inverted energy as well as at a constant average value of the voltage applied to the solenoid terminals equal to the average value of the counter electromotive force of the inverter.

In the latter case, the velocity of energy transfer is maximal for a given limiting value of the voltage. It should be noted in this connection that it is possible to use the inverter as an external load when transferring the energy from large superconductive magnetic systems for various purposes (power hydroelectric generators, electric motors, bubble chambers, etc.) in emergency situations (for example, when the normal phase appears in the inductor inverters are incomparably more compact, do not require high power cooling systems, etc.).

1/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--MINIMIZATION OF THE ERROR FUNCTIONAL IN THE CLASS OF RELAY FUNCTIONS AND ITS APPLICATION TO THE SYNTHESIS OF FM SIGNALS AND LINEAR

AUTHOR--(02)-KRUPITSKIY, E.I., SERGEYENKO, T.N.

COUNTRY OF INFO--USSR

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SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2, PP 252-256

DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--ERROR MINIMIZATION, FREQUENCY MODULATION, SIGNAL ANALYSIS, LINEAR ARRAY ANTENNA, ANTENNA RADIATION PATTERN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1864

STEP NO--UR/0109/70/000/002/0252/0256

CIRC ACCESSION NO--AP0130691

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130691

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW APPROACH IS TAKEN TO THE SOLUTION OF THE PROBLEMS OF THE SYNTHESIS OF FM SIGNALS AND LINEAR ANTENNAS IN THE CLASS OF RELAY FUNCTIONS OF THE CURRENT DISTRIBUTION, WHICH MAKES IT POSSIBLE TO OBTAIN THE BEST POWER MEAN APPROXIMATION TO THE GIVEN AUTOCORRELATION FUNCTIONS, GIVEN RADIATION PATTERN, AND OTHER FUNCTIONS OF INTEREST. THE METHOD REALIZATION IS DESIGNED FOR USE WITH A DIGITAL COMPUTER.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHASE MANIPULATED SIGNAL SYNTHESIS WITH THE AUTOCORRELATION
FUNCTION -U-
AUTHOR--SERGEYENKO, T.N. S
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNKA I ELEKTRONIKA, VOL. 15, NO. 3, 1970, PP
465-471
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--SIGNAL PROCESSING, SIGNAL ANALYSIS, AUTOCORRELATION
FUNCTION/UM20 DIGITAL COMPUTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0436 STEP NO--UR/0109/70/015/003/0465/0471
CIRC ACCESSION NO--AP0124182
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124182

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLUTION OF THE PROBLEM OF SYNTHESIZING A PHASE MANIPULATED SIGNAL BY USING THE METHOD OF MINIMIZING THE FUNCTIONAL ERROR OF APPROXIMATION TO A GIVEN AUTOCORRELATION FUNCTION IS PROPOSED. THE ASSUMPTION IS MADE THAT ANY POSITION OF THE SWITCHING MOMENTS OVER THE DURATION OF THE SIGNAL IS PERMISSIBLE. ATTENTION IS DRAWN TO THE FACT THAT IN THIS TREATMENT, USE IS MADE OF THE MOST WIDESPREAD CRITERION FOR ESTIMATING THE APPROXIMATION IN SIGNAL SYNTHESIS: THE QUADRATIC CRITERION CHARACTERIZING THE AVERAGE DEVIATION FROM THE OPTIMAL VALUE. TO FIND THIS OPTIMAL VALUE OF THE PHASE MANIPULATED SIGNAL, THE AUTHOR DEVELOPS AN ALGORITHM FOR PROGRAMMING AN M 20 ELECTRONIC COMPUTER. THE RESULTS OF THE COMPUTATION FOR VARIOUS AUTOCORRELATION FUNCTIONS ARE GIVEN. THE TIME REQUIRED FOR MACHINE COMPUTATION OF THE FIRST AUTOCORRELATION FUNCTION WAS ABOUT 15 MINUTES. THREE SUCH CALCULATIONS WERE MADE FOR THREE AUTOCORRELATION FUNCTIONS. IT IS CONCLUDED THAT THE PROPOSED APPROACH IS EFFECTIVE, AND THAT THE RESULTS OBTAINED BY OTHER INVESTIGATORS USING ASYMPTOTIC FORMULAS ARE CONFIRMED.

UNCLASSIFIED

USSR

UDC: 621.391.2:621.376.4

SERGEYENKO, T. N.

"Phase-Manipulated Signal Synthesis With the Autocorrelation Function"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 465-471

Abstract: A solution of the problem of synthesizing a phase-manipulated signal by using the method of minimizing the functional error of approximation to a given autocorrelation function is proposed. The assumption is made that any position of the switching moments over the duration of the signal is permissible. Attention is drawn to the fact that in this treatment, use is made of the most widespread criterion for estimating the approximation in signal synthesis: the quadratic criterion characterizing the average deviation from the optimal value. To find this optimal value of the phase-manipulated signal, the author develops an algorithm for programming an M-2C electronic computer.

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USSR

SERGEYENKO, T. N., Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 465-471

Abstract:

The results of the computation for various autocorrelation functions are given. The time required for machine computation of the first autocorrelation function was about 15 minutes. Three such calculations were made for three autocorrelation functions. It is concluded that the proposed approach is effective, and that the results obtained by other investigators using asymptotic formulas are confirmed.

2/2

USSR

SERGEYENKO, V. G.

"A Handy Sprayer"

Moscow, Zashchita Rasteniy, No 4, 1970, pp 58-59

Abstract: Pointers are given for prospective buyers of the GSH-2 hydraulic hose. The GSH-2 sprayer is highly praised, but a few individual modifications are reported which improve the overall performance of this sprayer: they involve modifying the filter (making it wire mesh), and making certain that the emulsion poured into the reservoir contains no large particles by pouring it through a funnel equipped with a wire-mesh filter. The spraying head is bent a little, allowing freedom of application from the top as well as from the bottom of the leaves. Finally, the pail usually used as the reservoir can be replaced by a plastic bag, allowing it to be carried on the back.

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USSR

UDC 669.046.5

SOKOLOV, G. A., ~~SERGEYEV, A. G.~~, TSYKIN, L. V., ZAVRAZHIN, V. D.,
VERKHOVTSSEV, E. V., VASIL'YEV, N. Ye., and D'YAKOV, S. I.

"The Effect of Vacuum-Slag and Two-Fold Slag Treatments on Electrical Steel Quality"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISI). (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 212-213

Translation of abstract: The effect of various outside-furnace steel treatments on desulfurization, contamination by nonmetallic impurities, and mechanical properties of various steels is considered. Data are given on the improvement of mechanical properties of structural alloy steels. 1 table.

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USSR

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~~SECRET~~

UFG 1 19:030.562

SOKOLOV, G. A., VERKHOVTSOV, E. V., KUDOMROV, V. M., SERGEEV, A. G., VASIL'YEV, N. Ye., and VDOVIN, V. R., Lipetsk Branch of Moscow Institute of Steels and Alloys; Izhevsk Metallurgical Plant

"Refining Open-Hearth Steel With Synthetic White Slag"

Moscow, Metallurg, No 9, Sep 70, pp 17-19

Abstract: In searching for ways of cutting costs of liquid synthetic slags produced from the costly SiO₂ byproduct, this paper attempts to introduce new compositions of slags designed for out-of-the-furnace refining of steel. The new composition, comprising 45-55% CaO, 17-25% SiO₂, 5-10% MgO, 7-13% Al₂O₃, and 2-7% CaF₂, appears to possess the most favorable combination of physicochemical properties. Industrial treatment of 20KhN3A and 30KhN3A constructional open-hearth steels with synthetic slag of this composition reduced the sulfur content in the experimental steel by 55-70%. The final sulfur level in the treated steel was low and conformed with that of electric steel treated with lime-silica slag. The service characteristics of the experimental steel also appeared to reach the level of steels treated with standard liquid synthetic slags. White synthetic slag will make possible the production of top-quality steel at lower cost per charge. At the Izhevsk Metallurgical Plant the savings per ton of treated steel amounted to 2.2 rubles.

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USSR

UDC 536.53.001.2

SERGEYEV, A. G., KRIVONOSOV, A. I., and PERSOV, I. A.

"Temperature Indicator Made From a Monocrystalline Thermoresistor"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), No 10, 1970, pp 183-185 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 71, Abstract No 2.32.1129)

Translation: The characteristics of germanium monocrystalline thermoresistors made of dendritic tape and obtained by the method of dendritic crystallization from supercooled germanium melts are presented. The results of studying their application as temperature sensors are presented. The standard temperature characteristics of the sensitive elements based on a germanium thermoresistor and also the scattering of the temperature characteristics are presented in a table. The maximum temperature of the indicator with a monocrystalline thermoresistor has an upper bound equal to the solder temperature of the electric leads and it can be increased by specially connected leads, for example, by the method of diffusion welding. The theoretical measuring circuit of the temperature indicator based on a monocrystalline thermoresistor is presented. There are 4 illustrations and a 1-entry bibliography.

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Pulse Technique

USSR

UDC: 621.317.79

KISELEVSKIY, F. N., SERGEYEV, A. I., TERTYSHNYY, V. T., Kiev "Order of Lenin" Polytechnical Institute imeni the Fiftieth Anniversary of the Great October Socialist Revolution

"A Device for Measuring the Time Intervals Between Adjacent Pulses of an Input Pulse Sequence"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334542, Division G, filed 9 Jul 70, published 30 Mar 72, p 175

Translation: This Author's Certificate introduces a device for measuring the time intervals between adjacent pulses of an input pulse sequence. The device contains an input pulse shaper, a quantizing pulse generator, a coincidence gate, a pulse counter, a switch and a registration unit. As a distinguishing feature of the patent, the design is simplified by adding a delay unit whose first input is connected to the output of the switch, while the second input is connected to the output of the shaper. The first output of the delay unit is connected to the input of the coincidence gate, and the second output is connected to the input of the pulse counter.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STATE OF THE CARDIOVASCULAR SYSTEM IN PATIENTS SUFFERING FROM
ADDISON'S DISEASE -U-
AUTHOR--(02)-VYAZITSKIY, P.O., SERGEYEV, A.I.
COUNTRY OF INFO--USSR
SOURCE--KARDIOLOGIYA 10(1): 135-139, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENDOCRINE SYSTEM DISEASE, ADRENAL GLAND, CARDIOVASCULAR
SYSTEM, EPINEPHRINE, ACTH, HYDROCORTISONE, HEMODYNAMICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0544 STEP NO--UR/0495/70/010/001/0135/0139
CIRC ACCESSION NO--AP0131167
UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0131167

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVEN PATIENTS WITH ADDISON'S DISEASE (34-49 YK OLD) WERE EXAMINED. THE STATE OF THE CARDIOVASCULAR SYSTEM WAS STUDIED MECHANOCARDIOGRAPHICALLY ACCORDING TO SAVITSKY AND POLYCARDIOGRAPHY WAS USED TO DETERMINE THE PHASIC STRUCTURE OF THE CARDIAC CYCLE. THE CIRCULATION VOLUMES WERE SHARPLY INCREASED WITH THE PERIPHERAL RESISTANCE BEING CUT DOWN ALMOST IN HALF. A REDUCED CONTRACTILE FUNCTION OF THE MYOCARDIUM PROBABLY OCCURS. THE EFFECT OF ADMINISTRATION OF EPINEPHRINE, ACTH AND HYDROCORTISONE SOLUTIONS ON THE HEMODYNAMICS WITH STUDIED IN 15 PRACTICALLY HEALTHY SUBJECTS TO IDENTIFY MECHANISMS GOVERNING CHANGES AT THE LEVEL OF THE CARDIOVASCULAR SYSTEM IN PATIENTS WITH ADDISON'S DISEASE. A COMPARISON OF THE DATA SUGGESTS THAT ACTH STIMULATED NOT ONLY THE SUPRARENALS, BUT ALSO THEIR MEDULLARY SUBSTANCE. THE ELEVATED ACTH SECRETION IN ADDISON'S DISEASE PROVOKED BY LOW BLOOD GLUCOCORTICOID CONCENTRATION LEADS, WITH AN INTACT MEDULLARY LAYER IN THE ADRENALS, TO AN INTENSIFIED PRODUCTION OF CATECHOLAMINES. THE ACTION OF THE LATTER MAY EXPLAIN HEMODYNAMIC CHANGES AND REDUCED CONTRACTILE FUNCTION OF THE MYOCARDIUM IN THE DISEASE UNDER DISCUSSION.

FACILITY: DEP. FAC. THER., S. M. KIROV MIL.-MED. ACAD., Leningrad, USSR.

UNCLASSIFIED

Steels

USSR

UDC 669.18.046.558.7

KALINNIKOV, Ye. S., MOKHIR, Ye. D., SERGEYEV, A. L., KHASIN, G. A. and VOINOV, S. G.

"Quality of Type ShKh15 Open Hearth Steel Refined with Synthetic Slag"

Moscow, Stal', No 1, Jan 73, pp 23-26.

Abstract: The content of nonmetallic inclusions and the macrostructure of type ShKh15 Steel, made according to the usual technology in a 20 ton electric furnace and according to a technology developed earlier in a 60 ton open hearth furnace is studied following treatment of the metal in the ladle with liquid synthetic slag and pouring into 2.7-4.9 t ingots, and also following several experimental treatments with variations of the mode of oxidation and deoxidation in the furnace and in the ladle with ingot weight 2.7 t. All types of SSh open hearth steel (except that poured into the largest ingot molds) satisfied all requirements and was equal in quality to the electric steel. The optimal results were produced using the SSh technology and using an altered version with tapping of the melt without adding the oxidizers (ores) and with the consumption of aluminum decreased to 200 g/t steel.

1/1

USSR

UDC 614.715:614.72

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.YELFIKOVA, YE. V., Candidate of Medical Sciences, GUSEV, M. I., Professor,
NOVIKOV, YU. V., Doctor of Medical Sciences, YUDINA, T. V., SERGEYEV, A. N.,
Candidate of Medical Sciences, Moscow Scientific Research Institute of Hygiene
and F. F. Erisman

"Study of the Combined Resorptive Effect of Atmospheric Pollution (Gas and
Dust)"

Moscow, Gigiyena i Sanitariya, No 8, 1972, pp 11-15

Abstract: A study was made of the combined effect of sulfur dioxide, carbon monoxide, phenol and finely dispersed dust characteristic of the air pollution caused by ferrous metallurgy enterprises. Experimental studies were performed on white rats for 96 days in the presence of an aerosol with the following concentrations: SO_2 0.05 mg/m³, CO 1 mg/m³, phenol 0.01 mg/m³ and 0.15 mg/m³ of dust. Significant changes took place in the animals with respect to all tests. The effect of the aerosol in a concentration of 0.5 mg/m³ implies a reduction in the total nucleic acids and the permeability of the histogenic barriers in the ovaries. One group of rats underwent stable changes in behavior and biochemical and physiological reactions. The total combinations of fractional concentrations of the substances with respect to their threshold values at a level less than one (0.76) has no effect on the animals.

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USSR

YELFIMOVA, YE. V., et al., *Gigiyena i Sanitariya*, No 8, 1972, pp 11-15

The combined resorptive effect of small concentrations of sulfur dioxide, carbon monoxide, phenol and dust is characterized by the summation effect. In estimating the degree of pollution of the atmospheric air in samples taken around the clock, a level for which the total fractional concentration does not exceed 0.76 of the maximum permissible concentrations is recommended.

2/2

USSR

UDC: 534.883

SERGEYEV, An.

"Underwater Radio Electronics"

Radioelektronika pod vodoy (cf. English above), Leningrad, "Energiya", 1971, 142 pp, ill. 42 k. (from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6A415 K)

Translation: The book acquaints the reader with basic trends in the development of modern hydroacoustics. Theoretical principles of physical acoustics and acoustics of the sea are presented. Consideration is given to the principles of action of electroacoustic transducers and acoustic antennas, as well as the construction of modern hydroacoustic facilities. A list of specialized literature is presented. L. K.

1/1

1/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--DIRECT FLUORGALKENYLATION. VI. IMPROVEMENT IN A METHOD FOR
SYNTHESIZING FLUROALKENYL AMINES -U-
AUTHOR-(03)-SERGEYEV, A.P., NOVOZHILOVA, T.I., YAKUBOVICH, A.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 747-54

S

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, AMINE, ORGANIC SYNTHESIS,
ORGANLITHIUM COMPOUND, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1955

STEP NO--UR/0366/70/006/004/0747/0754

CIRC ACCESSION NO--AP0125544

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS CONDITIONS WERE WORKED OUT FOR THE PREPN. OF RNR PRIME1 R PRIME2 (WHERE R ARE F SUB2 C:CF, ClFC:CF, F SUB2 C:CF CF SUB2, FHC:CF, F SUB2 HCCF SUB2, ClFHCCF SUB2, F SUB3 CCHFCF SUB2, FBRHCCF SUB2, F SUB2 HCCO, ClFHCCO, F SUB3 CCHFCF SUB2, OR BRFHCCO, AND NR PRIME1 R PRIME2 ARE NBU SUB2, PIPERIDINO, MORPHOLINO, NME SUB2, NET SUB2, NACPH, NHPH, OR NMEPH). EXAMPLES: THE REACTION OF HNBU SUB2 WITH BULI IN HEXANE GAVE LINBU SUB2 WHICH WITHOUT ISOLATION WAS CONDENSED WITH F SUB2 C:CF SUB2 IN AN AUTOCLAVE AT 90-150DEGREES TO GIVE F SUB2 C:CFNBU SUB2. THE DISPERSION OF LI IN TETRAHYDROFURAN WAS TREATED WITH PHNHAC TO GIVE PHNACLI, WHICH WITHOUT ISOLATION WAS TREATED WITH CF SUB2:CF SUB2 TO GIVE CF SUB2:CFNACPH. THE DEHYDROGENATION OF BRFHCCFHACPH WITH POWD. ZN GAVE FHC:CFNACPH. THE HYDROLYSIS OF PHNACCF:CFX OR OF PHNACCF SUB2 CHFX (X IS H, F, OR CL) GAVE PHNHCOCHFX.

UNCLASSIFIED

USSR

UDC 576.312.342

BOCHKOV, N. P., KULESHOV, N. P., SERGEYEV, A. S. and YAKOVENKO, K. N., Institute of Medical Genetics, Academy of Sciences USSR, Moscow

"Identification of Human Chromosomes Forming Dicentrics After Irradiation"

Moscow, Genetika, Vol 6, No 4, 1970, pp 179-185

Abstract: Peripheral-blood leukocytes of three adult men were irradiated with x-rays in a dose of 92 rad. The culture time was 54 hours, so that metaphases of the first postirradiation mitosis were investigated. A karyotype analysis of cells with dicentrics was conducted. The experimental frequency of involvement of chromosomes in the formation of dicentrics differs from the theoretically expected one, both in respect to the length of chromosomes, and their numbers. The involvement of chromosomes in dicentrics is not random. Chromosomes of the D and E' groups are involved more frequently, while the G group is involved less frequently than expected due to the length of chromosomes. Also, the dicentrics consisting of C and E, D and D, E' and E, F and G chromosomes occur more frequently, while those of I and I, C and C occur less frequently than theoretically expected. These differences are explained on the basis of different distribution of chromosomes in the nucleus.

1/1

USSR

UDC 621-183.2:778.4

TSELIKOV, A. I., Academician, MOROZOV, B. A., Doctor of Technical Sciences, SURKOV, A. I., Candidate of Technical Sciences, and SERGEYEV, A. V., Engineer

"Potentialities of the Application of Holography in Heavy Machinebuilding"

Moscow, Vestnik Mashinostroyeniya, No 9, Sep 73, pp 7-11

Abstract: The holographic installation developed by the All-Union Scientific Research, Planning, and Design Institute of Metallurgical Machinery is described by reference to its optical schema. The results of the application of holographic interferometry for the study of deformations and dislocations of various parts, a cramp, a supporting wall, a cast in block channel beam of a hydraulic press, produced of steel and organic glass, are discussed by reference to interferograms produced by the method of double exposure. From shown interference lines of a lead specimen was plotted the distribution diagram of elastic and plastic deformations for two changing load conditions. Such diagrams can be plotted for free surfaces of plastically deformable bodies independent from their form and their material; they provide an idea of the influence of the form of the part and also of the nature of its material on the character of the propagation of deformations. Seven figures.

1/1

1/3 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--APPROXIMATING FUNCTIONS FOR NEUTRON COMPONENT COUPLING
COEFFICIENTS, APPROXIMATING FUNCTIONS FOR COUPLING COEFFICIENTS FOR
AUTHOR--SERGEYEV, A.V.

COUNTRY OF INFO--USSR

S
SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 529-530

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY,
ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ENERGY SPECTRUM, NEUTRON, COSMIC RAY INTENSITY, GEOMAGNETIC
LATITUDE, SOLAR ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1928

STEP NO--UR/0203/70/010/003/0529/0530

CIRC ACCESSION NO--AP0133776

UNCLASSIFIED

2/3 024

CIRC ACCESSION NO--AP0133776
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE FUNCTIONS OF THE COUPLING COEFFICIENTS FOR THE NEUTRON COMPONENT CAN BE COMPUTED $w_{SUBR SUBC}$ $PRIME1 (R, H SUBL)$ OVER $I_{SUBR SUBC}$ $PRIME1 (H SUBL)$, WHERE $I_{SUBR SUBC}$ $PRIME1 (R, H SUBL)$ IS THE INTENSITY OF SECONDARY PARTICLES OF THE I SPECIES AT A POINT WITH THE CUTOFF RIGIDITY R_{SUBC} AT THE OBSERVATION LEVEL H_{SUBL} . FOR MOST PRIMARY COSMIC PARTICLES WITH HARDNESSES R SMALLER THAN OR SIMILAR TO $10 PRIME15 EV$ THE ENERGY SPECTRUM HAS BEE INVESTIGATED EXPERIMENTALLY AND IS DESCRIBED QUITE ACCURATELY BY (1). BUT WITH RESPECT TO THE FUNCTION $w_{SUBR SUBC}$ $PRIME1 (R, H SUBL)$ UNCERTAINTY EXISTS DUE TO LACK OF RIGOROUS QUANTITATIVE DATA FOR NUCLEAR CASCADE PROCESSES IN THE EARTH'S ATMOSPHERE. ACCORDINGLY, IN PRACTICAL INVESTIGATIONS OF INTENSITY VARIATIONS IN COSMIC RAYS THE FUNCTIONS OF THE COUPLING COEFFICIENTS IN (1) ARE DETERMINED FROM THE GEOMAGNETIC LATITUDE EFFECT. THE REGION R LARGER THAN OR EQUAL TO $17 GEV$ OF THE PRIMARY SPECTRUM THE COUPLING COEFFICIENTS ARE FOUND BY EXTRAPOLATION. THE $w_{SUBR SUBC}$ $PRIME1 (R, H SUBL)$ VALUES ARE USUALLY GIVEN IN TABULAR OR GRAPHIC FORM, ALTHOUGH SOLUTION OF THE PROBLEMS IN STUDYING COSMIC RAY VARIATIONS REQUIRES REPRESENTATION OF THE FUNCTION $w_{SUBR SUBC}$ $PRIME1 (R, H SUBL)$ IN ANALYTICAL FORM. IN THIS PAPER THE PROBLEM IS SOLVED FOR THE COUPLING COEFFICIENTS OF THE COSMIC RAY NEUTRON COMPONENT OBTAINED DURING THE EPOCH OF MINIMUM SOLAR ACTIVITY (1954) FOR ATMOSPHERIC DEPTHS H_{SUBL} EQUALS $1,000, 680, AND 312 MB$.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133776

ABSTRACT/EXTRACT--THE GENERAL FORM OF THE EMPIRICAL FUNCTION OF COUPLING COEFFICIENTS IS $w_{SUBR} SUBC PRIME1 (R, H SUBL) EQUALS AR PRIME$ NEGATED BE PRIME NEGATIVEBRP. THE ARTICLE GIVES THE VALUES OF THE COEFFICIENTS A, A, B, B, P FOR PARTICLES WITH HARDNESSES R LARGER THAN OR EQUAL TO 2.5 GEV. A FIGURE SHOWS CURVES OF THE COUPLING COEFFICIENTS FOR THE NEUTRON COMPONENT FOR H SUB1 EQUALS 1,000 MB AND H SUB2 EQUALS 680 MB. FACILITY: SIBERIAN INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION.

UNCLASSIFIED

AA0047084- SERGEYEV, A.V.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

241515 STATOR WINDING ARRANGEMENT OF ELECTRICAL MACHINES
 with liquid cooling is reduced in size and provides more reliable electrical connections. The basic solid conductors (1) of winding (2) are bent and form two separate groups to facilitate good electrical connections. The hollow conductors (3) are brought out beyond the junction of two groups to be joined electrically. The rest of the bunch is filled with conductors (4). The coolant is admitted via hermetic joint (5,7) to which the hollow conductors are soldered.
 30.1.67 as 1130120/24-7. V.S.KIL'DISHEV et al. (19.9.69)
 Bul 14/18.4.69. Class 21d1. Int.Cl. H 02k.

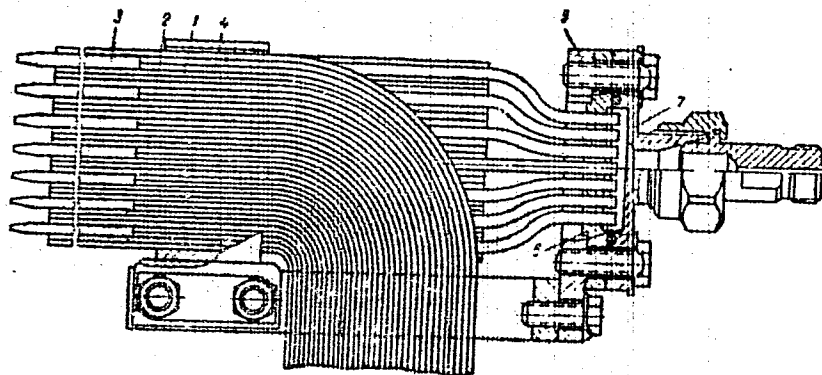
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19790560

AA0047084

AUTHORS: Kil'dishev, V. S.; Krashchenko, A. I.; Levitskiy, A. K.; Sergeyev, A. V.;
Stanislavskiy, L. Ya.



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19790561

USSR

UDC: 621.375.4

SIVERS, M. A., SPIRIDENKOV, E. M., SERGEYEV, A. Ya.

"A Wide-Band Transistorized Power Amplifier"

Kiev, Izvestiya VUZov, Radioelektronika, Vol 15, No 1, Jan 72, pp 99-102

Abstract: The authors examine the operation of a wide-band transistorized transformer power amplifier free of the nonlinear distortions caused by the scattering inductance of the load transformer. These nonlinear distortions are completely eliminated by ensuring current flow continuously through the transistors. In order to keep the efficiency of the amplifier high, operating conditions are chosen in such a way that each transistor operates in the saturation region during half the period of high-frequency oscillations, and in a mode corresponding to the active region of the current-voltage curve of the device during the other half. Common-emitter and common-base versions of such a circuit are given. The proposed circuit ensures an efficiency equivalent to that of a power amplifier for class B operation. An experimental check of the computational procedure showed excellent agreement. The conclusions of the research are applicable to vacuum-tube amplifiers as well. Two figures, bibliography of two titles.

1/1

1/2 031

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--EVOLUTION OF HIGHER NERVOUS ACTIVITY IN THE LIGHT OF THE MARXIST
LENINIST THEORY OF REFLECTION -U-

AUTHOR--SERGEYEV, B.F.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 2, PP
352-362

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHYSIOLOGIC ADAPTATION, REFLEX, NERVOUS SYSTEM, CENTRAL
NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0358

STEP NO--UR/0247/70/020/002/0352/0362

CIRC ACCESSION NO--AP0132588

UNCLASSIFIED

2/2 031

CIRC ACCESSION NO--AP0132588
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE DEGREE OF ADAPTATION OF LIVE ORGANISMS IS DIRECTLY RELATED TO THE DEGREE OF ADEQUACY WITH WHICH THEY REFLECT THE FACTORS OF SURROUNDING MEDIUM. THERE ARE THREE MAIN TYPES OF INDIVIDUALLY ACQUIRED ADAPTIVE REACTIONS. THE REACTIONS OF THE LOWEST TYPE ARE INHERENT IN ALL ANIMALS WITHOUT EXCEPTION, INCLUDING THOSE WITH NO NERVOUS SYSTEM. THEY ARE REACTIONS OF CHANGE OF EXCITABILITY (RISE OR DECREASE) AND THEIR FORMATION DOES NOT REQUIRE ANY DEFINITE SEQUENCE OR STRICT COINCIDENCE IN TIME OF INDIFFERENT AND REINFORCING STIMULI. REACTIONS OF THE SECOND TYPE ARE OF THE NATURE OF A SUMMATION REFLEX OR A DOMINANT STATE. THEY ARE FORMED ONLY IN ANIMALS WHOSE NERVOUS SYSTEM POSSESSES AT LEAST SOME FEATURES OF CENTRALIZATION (PLATHELMINTHES, ACRANIA, TUNICATA) AND THEIR APPEARANCE REQUIRES A COINCIDENCE IN TIME OF THE STIMULI COMBINED. THE HIGHEST TYPE OF ADAPTIVE REACTIONS ARE GENUINE TEMPORARY CONNECTIONS, WHICH APPEAR DUE TO TEMPORARY FUNCTIONAL CONSOLIDATION OF SEPARATE ELEMENTS OF THE CENTRAL NERVOUS SYSTEM. HENCE, THERE IS EVIDENTLY A STRICT CORRELATION BETWEEN THE TYPE OF ORGANISATION OF THE CENTRAL NERVOUS SYSTEM AND THE LEVEL OF DEVELOPMENT OF ITS REFLECTING ACTIVITY. FACILITY:
SECHENOV INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, USSR
ACADEMY OF SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

~~SERGEYEV, B. G.~~

UDC 577.4

"A Method of Analyzing Automata for Monitoring and Diagnostics"

V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works), Moscow, Nauka Press, 1972, pp 214-218 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V411)

No abstract

1/1

USSR

UDC 621.396.67.095.1

RIMSHA, V. A., ~~SERGEYEV, R. G.~~, KOMKOV, A. S.

"A Method of Forming Sum-and-Difference Diagrams on Higher Wave Modes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327547, Division H, filed 19 May 69, published 26 Jan 72, p 156

Translation: This Author's Certificate introduces a method of forming sum-and-difference diagrams on higher wave modes in a single-horn monopulse radiator. As a distinguishing feature of the patent, the method provides for direction finding and automatically tracking a signal source with arbitrary polarization. In the aperture of the radiator a superposition is excited from each difference channel in the form of two orthogonal fields displaced in phase by $\pi/2$ and having a zero in the plane of the orthogonal channel.

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- 13 -

USSR

SERGEYEV, B. G.

"Conditions of Determinism of Logical Nets Considering Failures"

Tr. In-t. Elektron. Upravl. Mashin. [Works of the Institute of Electronic Control Machines], No 10, 1970, pp 56-81, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V315 by A. Kobozev).

Translation: This work studies the conditions of determinism for a logic net when the net contains an arbitrary set of logic failures. Necessary and sufficient conditions are found for determinism of the commonest types of triggers and a pseudo regular net. For synchronous multiphase nets (SMN) and derivative nets of these nets, similar conditions are produced for a special type of input sequences, with which testing of determinism of the net is essentially quicker than testing of the same conditions for general nets. The results produced allow a number of recommendations to be given for the construction of SMN with the maximum share of logical failures, capable of leading to the dependence of the states of the system on parasitic delays in elements.

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USSR

UDC 681.332.65

SERGEYEV, B. G.

"Three-Cycle Counter"

USSR Author's Certificate No 264822, filed 3 Sep 68, published 17 Jun 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6,
Jun 71, Abstract No 6B229P)

Translation: This invention belongs to the field of computer engineering. It can be used in digital computers and control machines and in various digital automation devices. Potential counters with group carry containing a basic and auxiliary registers and a combination summing circuit which adds the contents of the auxiliary register to the carry unit are known. However, the known counters require significant expenditures of equipment, especially for a large number of bits. This arises from the fact that in each group of bits of the counter there is an auxiliary register and a combination summing circuit; consequently, if n is the number of k -bit groups in the counter, the number of k -bit auxiliary registers and summing circuits is also equal to n . The counter of the proposed design eliminates the indicated deficiency. Thus, the purpose of the invention is to reduce the equipment, primarily the flip-flops (inverters), and the potential counter

1/3

USSR

SERGEYEV, B. G., USSR Author's Certificate No 264822, filed 3 Sep 68, published 17 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6B229P)

with group carry by introducing a k-bit auxiliary register and one k-bit summing circuit for n groups. In addition to the latter, the proposed counter in each discharge group contains a flip-flop for fixing the group carry. The ones input of this flip-flop in each group is connected to the AND element of the group carry detection circuit. The inputs of this AND element are connected to the synchronization buses of the third phase and to the ones output of the flip-flop for fixing the group carry of the preceding group. The zero and ones outputs of the flip-flop for fixing the carry are connected to the inputs of the AND elements for setting the flip-flops of the basic register of the subsequent group of counter bits to "1" and to "0" and also to the inputs of the AND elements of the receiver for the auxiliary register common to all groups. The zero output of the setting flip-flop is also connected to the inputs of the AND elements for setting the flip-flops of the basic register of its group to "1." The outputs of the AND elements for reception to the auxiliary register connected to the same bits of all groups via the OR element are connected to the ones input of the flip-flop of the same bit of the auxiliary register. The outputs of

USSR

SERGEYEV, B. G., USSR Author's Certificate No 264822, filed 3 Sep 68,
published 17 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 6, Jun 71, Abstract No 6B229P)

the combination summing circuit common to all groups are connected to the
inputs of the AND element for setting the flip-flops of the same bits of
all groups of the counter to "1."

3/3

AA0051846

S

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

236860 CYCLIC SUBPROGRAMMER includes operational code registers, a cycle counter and a zero identification unit with its output connected to the input of a microcommand shaper. The registers are in a series circuit, with the outputs connected to the inputs of the next and of a printer. The information lines are linked to the cycle counter input and to the inputs of one of the operational code registers. All second inputs of the latter are combined and joined to the shaper outputs and their third inputs go to the lines of the operational unit. 15.6.67 as 1167066/26-24. B.G.SERGEEV.ELECTRONIC CONTROL MACHINERY INST. (1.7.69) Bul 7/3.2.69.Class 42m3. Int.Cl.G 06f.

Author: Sergeyev, B.G.;

Institut Elektronnykh Upravlyayushchikh

Mashin

19820273

gc 4

GEORGEYEV, D. I.

TECHNICAL TRANSLATION

TRIC-INT-232-72

ENGLISH TITLE: Thermomaxson Energy Converters

FOREIGN TITLE: Термомаксонные Преобразователи Энергии

AUTHOR: B. V. Yeliseyev, A. P. Ryabitskiy, D. I. Sergeyev

SOURCE: Atomizdat, Moscow

Translated for PSIC by ACSI

NOTICE

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Aeronautical & Space

USSR

UDC 629.78.062:681.14

TERYAYEV, Ye. D., Shamrikov, B. M., and Sergeev, E. A.

"Prospects for the Use of Aircraft-Borne Digital Computers in Complexly Automated Adaptive Systems of Aircraft Control"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR. No 6 (53), 1972, pp 19-29 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.211, by T. A. Ye.)

Translation: In complex automated control systems, aircraft-borne digital computers control the flight (control by means of the trajectory and the angular position), control the engines, perform the processing of information and deliver the flight data, control the parametric functions, and monitor the operation of individual subsystems. Ways of constructing a complex system on the basis of an aircraft-borne digital computer are shown, an approach to the selection of an aircraft-borne digital computer in complex systems of aircraft control is presented, predictions are made concerning the characteristics of aircraft-borne digital computers of the future, which will have the following features: 1) standard microcomponents; 2) functionally programmed networks of microcomponents; 3) a continuously changing microstructure; 4) self-diagnosis and self-repair; 5) self-organizing complex subsystems; 6)

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USSR

TERYAYEV, Ye. D., et al., Inform. Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika." AN SSSR. No 6 (53), 1972, pp 19-29 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.211, by T. A. Ye.)

indication of circuit component faults; 7) structural and functional flight stability. 7 references.

2/2

- 1 -

USSR

UDC 001.812 539.1.05

SERGEYEV, F. M., Candidate of Physical and Mathematical Sciences

"Automation of Experiments in Nuclear Physics"

Moscow, Priroda, No 9, 1971, pp 60-70

Abstract: The author discusses the place of automation in experimental nuclear physics involving the study of the atomic nucleus and elementary particles. It is pointed out that one of the most important areas in the entire problem of automation of experiments in nuclear physics is automatic processing of experimental data. In this connection, the most important problem now being solved is automatic analysis of bubble-chamber photographs. The paper reviews some of the more important methods and devices used for partially or completely automating the process of converting these photographs into a form suitable for computer processing. In the latest systems, the computer is an integral part of the data processing equipment. One of the most ambitious lines of research in this area is in development of a system with a spark chamber which eliminates the photograph entirely, going directly from the raw data (nuclear events) to the final result (masses

1/2

USSR

SERGEYEV, F. M., Priroda, No 9, 1971, pp 60-70

and velocities of the particles). In essence, this system uses a TV image in place of the photograph. Modifications would allow recording on a ferrite bead matrix or magnetic tape for immediate computer input and processing. In contrast to the problems in high-energy physics, the case of low-energy interactions (e. g., nuclear spectroscopy) is complicated by the necessity for recording a large number of events in a short time (e. g., by counter-type instruments) with subsequent processing by predetermined characteristics of different events. The place of the computer in physics experiments is discussed. Eight figures.

2/2

- 109 -

SERGEYEV, F. M.

17 April 75

HIGH-ENERGY AND ELEMENTARY-PARTICLE PHYSICS
(Session in Moscow)

[Article by Candidate of Physical and Mathematical Sciences F. M. Sergeyev, Moscow, Vestnik Akademii Nauk SSSR, Russian, No. 1, August 1971, pp 74-81]

On 29-31 March, in the Moscow Engineering Physics Institute, was held a session of the Department of Nuclear Energy of the AS USSR, devoted to questions of high-energy elementary particle physics. More than 400 scientists and students took part in the work of the session and about 200 original reports were heard.

Opening the meeting, M. A. Markov, Academic Secretary of the Department, noted the urgency of the theme of the session and the importance of its being conducted within the walls of a VUZ.

The session permitted clearly tracing the main trends in the development of high-energy and elementary-particle physics. Much interest was aroused by work in which problems of instantaneous generation and experimental investigation of hadrons are discussed in that area and still greater interest. Substantial progress is being made, on the one hand, by the new possibilities of them, by the unquestionable successes of theory and, on the other, by the development of describing instantaneous processes by means of concepts of the "familiar" Heisenberg theory.

In a survey report entitled "Diffraction and formation of showers at a (0) ...", K. A. Ter-Mikaelian showed that the formation of high-energy particles in the theory of the increase of energy in the case of consideration of ionospheric regions appears in the case of consideration of ionospheric regions, which cause the desired shift of the Pomeranchuk pole.

USSR

SERGEYEV, G., Col Med Serv, Distinguished Physician RSFSR, and VYADRO, M.,
Doctor of Medical Sciences, Distinguished Physician RSFSR

"Guarding the Health of Airmen"

Moscow, Aviatsiya i Kosmonavtika, No 7, 1973, p 40

Abstract: Since its establishment in World War II, the Central Scientific Research Hospital has been seeking ways to improve the diagnosis and treatment of flight-related illnesses. Many years of analyzing clinical data have produced adequate criteria for flight certification commissions to judge the fitness of airmen, particularly those being released after illness. Limitations imposed on flight by particular illnesses are now known more precisely. The hospital has also been studying responses of the healthy body to flight-related stresses in order to develop a standard with which pathological conditions could be compared. Some of the hospital's achievements -- for example, stress testing apparatus and a vibration procedure for removing urinary calculi -- have found application outside the air force and civil aviation. The staff is active in information dissemination outside the hospital, consultation, and degree program sponsorship.

1/1

- 2 -

USSR

UDC: 519.2:62-50

SERGEYEV, G. A., ROMANENKO, A. F.

"Structural Analysis of Nonstationary Random Processes"

V sb. Nelineyn. i optimal'n. sistemy (Nonlinear and Optimum Systems-- collection of works), Moscow, "Nauka", 1971, pp 420-429 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V306)

Translation: The authors consider a method of structural analysis which stems from assumption of the possibility for using a nonstationary random process with generalized stationary m -th order increments as a mathematical model for an extensive class of nonlinear dynamic systems. Algorithms for structural analysis of these kinds of classes of random processes are considered, and their effectiveness is evaluated. A relationship is established between structural and correlation functions, and the results of structural analysis of different forms of random processes are considered. It is pointed out that the effectiveness of the structural analysis can be improved by using self-adaptive operators with finite memory. Authors' abstract.

1/1

- 20 -

USSR

UDC 541.11:543.422.25:541.49:547.551:547.822.3:547.1'118

GOLOVNYA, R. V., ZHURAVLEVA, I. L., ZENIN, S. V., POLYAKOV, V. A.,
SERGEYEV, G. B.

"Determining the Thermodynamic Characteristics of the Complex Formation of Amines with Alkyl and Aryl Phosphates by the Nuclear Magnetic Resonance Method"
Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2595-2597

Abstract: The equilibrium constants, enthalpy variation, entropy variation and chemical shifts were obtained for complex formation of aniline with triethyl phosphate and tri-p-tolyl phosphate and piperidine with tri-o,p-xylene phosphate. The complex formation of pyridine with triphenyl phosphate was detected. The complex formation of phosphates with amines takes place both by the path of formation of the hydrogen bond $NH...O=P$ and $N^{\ominus}...P^{\oplus}$ bond. A method is proposed for determining the complex formation constants from the nuclear magnetic resonance data for comparable concentrations of the components. The process of complex formation in the given systems follows from the fact that on the addition of phosphates to the amine solution, the signals from the protons of the NH groups shift in the direction of the weak field.

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UDC: 669.018.45:548.55

SAVITSKIY, Ye. M., BURKHANOV, G. S., SHNYREV, G. D., DORON'KIN, Ye. D.,
SERGEYEV, N. N.

"Use of Plasma Heating for Growth of Single Crystals of Refractory Metals"
Moscow, Tsvetnyye Metally, No 12, Dec 73, pp 40-41.

Abstract: Plasma heating is used to intensify metallurgical processes and create new methods for production and refining of metals. The method of cathode-ray zone melting allows pure, low-defect single crystals of various metals to be produced, but cannot be used for large single crystals, since the diameter is limited by surface tension. This has required the development of another method for production of single crystals of refractory metals, allowing the production of large single crystals and their purification of carbon. This article describes a method for producing large single crystals of tungsten and molybdenum using plasma-arc heating. The productivity of the method is several times higher than that of cathode ray zone melting. It is economically competitive with vacuum-arc melting, but produces higher-quality tungsten crystals. The quality of the tungsten crystals is approximately equal to those produced by cathode ray zone melting.

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Nitrogen Compounds

USSR

UDC 541.515:621.318.14:547.232

LEYENSON, I. A., SERGEYEV, G. B., Moscow State University imeni
M. V. Lomonosov, Moscow, Ministry of Higher and Secondary
Specialized Education RSFSR

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 5, May 70,
pp 1146-1152

Abstract: A report is made on free radical reaction of tetranitro-
methane with olefines, the reaction going through the donor-acceptor
type of molecular complexes. Tetranitromethane was reacted with
cyclohexene without solvent by keeping a mixture of $C(NO_2)_4$ and
cyclohexene for several hours at ice water temperature followed
by several weeks at room temperature; the reaction products were
dissolved in a 3:1 mixture of $CCl_4-C_2H_5OH$ and filtered, the solvent
was evaporated, and the crystalline material was recrystallized
from $CCl_4-C_2H_5OH$. From different ratios of the reagents the follow-
ing compounds were isolated: N-(2'nitro)-cyclohexoxy-3,3-dinitro-
cyclohexanoisoxazolidine, m.p. 108-109°C; adipic acid, m.p. 149-
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USSR

LEYENSON, I. A., et al, Zhurnal Fizicheskoy Khimii, Vol 44, No 5, May 70, pp 1146-1152

150°C; 1-nitro-2-nitrosocyclohexane dimer m.p. 145°. The heat of complex formation was found to be $\Delta H = -2.0 \pm 0.2$ kcal/mole. Free radicals were noted in C(NO₂)₄ mixtures with several olefines studied, with the exception of 2-ethylbutene-1. On the basis of the products obtained and the EPR data, a free radical mechanism is proposed for the reaction of C(NO₂)₄ with olefines. The first stage consists of the formation of a charge transfer complex with a heteropolar structure. Free radicals form most probably during homolytic breakdown of the complex in which a complete electron transfer takes place.

1/2 023

TITLE--ULTRAVIOLET ABSORPTION SPECTRUM OF A GLASSY 17.5M SOLUTION OF
HYDROGEN PEROXIDE IN WATER AT 77DEGREE SK --U--
AUTHOR--(02)--GURMAN, V.S., SERGEYEV, G.B.

PROCESSING DATE--20NOV70

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 803-4

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, HYDROGEN PEROXIDE, LOW TEMPERATURE EFFECT

S

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1700

STEP NO--UR/0076/70/044/003/0803/0804

CONTROL NO--AP0125321

UNCLASSIFIED

PROCESSING DATE--20NOV70

UNCLASSIFIED

2/2 023
CIRC ACCESSION NO--A0125321
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE UV SPECTRA OF FROZEN SOLN. OF H SUB2 O SUB2 IN WATER WERE OBTAINED AS THE DIFFERENCE BETWEEN THE SPECTRUM OF THIS SOLN. AND THAT OF WATER, BOTH FROZEN WITH LIP. N. IN THIS WAY THE SPECTRUM WAS MEASURED OF 17.5M SOLN. OF H SUB2 O SUB2 IN WATER AT 265-320 NM. THE SPECTRA OF LIQ. AND SOLID SOLN. OF 17.5M H SUB2 O SUB2 IN WATER ARE IDENTICAL IN THIS REGION. FACILITY: MOSK. GUS. UNIV. IM. LCMCNOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 015

TITLE—OXIDATION KINETICS OF 1,4-NAPHTHALENE DIOL PHOSPHATES —U—

UNCLASSIFIED
PROCESSING DATE—30OCT70

AUTHOR—(02)—SERGEYEV, G.B., BATYUK, V.A.

COUNTRY OF INFO—USSR

SOURCE—DOKL. AKAD. NAUK SSSR 1970, 190(6), 1399-402

DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—OXIDATION KINETICS, NAPHTHALENE, ALCOHOL, ORGANIC PHOSPHATE,
CHLORINATED ORGANIC COMPOUND, DIELECTRIC CONSTANT, COMPLEX COMPOUND

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/1089

STEP NO—UR/0020/70/190/006/1399/1402

CIRC ACCESSION NO—AT0124746

UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AT0124746

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE REPORTED FOR
 OXIDN. BY A COMPLEX OF IODINE WITH MEOH, AT PH 6 AND TEMPS. FROM 5 TO
 25DEGREES, OF (MEC) SUB2 P(O)OR, WHERE R WAS THE GROUP OF
 2,3-DIMETHYL,4-HYDROXYNAPHTH,1,YL (I) OR ITS 2,3-DICHLORO ANALOG (II).
 THE REACTION WAS FOLLOWED BY UV SPECTRAL CHANGES. THE RATE CHANGE IN
 SOLVENTS OF DIFFERENT DIELEC. CONST. FOLLOWED THE KIRKWOOD EQUATION,
 INDICATING PARTICIPATION OF TWO DIPOLAR MOLS.; THE ACTIVATION ENERGY AND
 PREEXPONENTIAL COEFF. WERE FUNCTIONS OF THE DIELEC. CONST. OF THE
 MEDIUM. THE REACTION, WHICH RESULTS IN A SUBSTITUTED
 1,4-NAPHTHOQUINONE, HI, AND (MEC) SUB2 PO SUB2 H, IS LIMITED BY THE RATE
 OF OXIDN. OF THE QUINOL PHOSPHATE BY THE COMPLEX. FACILITY:
 MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ULTRAVIOLET SPECTRA AND IONIZATION CONSTANTS OF SOME QUINOL
PHOSPHATES IN AQUEOUS ALCOHOL SOLUTIONS -U-
AUTHOR--(05)-SERGEYEV, G.B., KARUNINA, L.P., BATYUK, V.A., ZENIN, S.V.,
SIROTA, T.V.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 112-15
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--UV SPECTRUM, IONIZATION, HYDROQUINONE, ORGANIC PHOSPHATE,
OXIDATION, QUINONE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1293 STEP NO--UR/0189/70/011/001/0112/0115
CIRC ACCESSION NO--AP0116754
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116754

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNOWLEDGE OF THE REACTIVITY OF QUINOL PHOSPHATES IS IMPORTANT FOR THE STUDY OF THE REACTION OF CONCERTED OXIDATIVE PHOSPHORYLATION. THE UV SPECTRA OF THESE COMPODS. AND THEIR PK VALUES WERE STUDIED. IN THE SPECTRA OF THE NAPHTHOQUINOL DERIVS. STUDIED, 2 DISTINCT ABSORPTION MAX. OCCUR AT SIMILAR TO 240 AND SIMILAR TO 300 NM. IN THE SPECTRA OF THE IONIC FORM, THE ABSORPTION MAX. ARE SHIFTED TOWARDS LONGER WAVELENGTHS AND THEIR ABSORPTIVITY IS HIGHER AS COMPARED WITH THE UNIONIZED FORM OF THE COMPODS. A SHARP DIFFERENCE BETWEEN THE SPECTRA OF THE IONIC AND OF THE UNDISSOC. FORMS ALLOWS ONE TO DET. THE IONIZATION CONSTS. THE PK MEASURED INDICATE THAT THE COMPODS. ARE WEAK ACIDS. INTRODUCTION OF 1 MORE ME GROUP INTO THE MOL. OF A METHYL NAPHTHOQUINOL PHOSPHATE LOWERS THE ACIDITY OF THE COMPD. BY SIMILAR TO 0.5 PK, WHEREAS THE REPLACEMENT OF ME GROUPS BY CL ATOMS AT THE 2 AND 3 POSITIONS SHARPLY INCREASES THE ACIDITY. INCREASED DILN. WITH MEQH (FROM 50 TO 5PERCENT) RESULTS IN ENHANCED ACIDITY (BY SIMILAR TO 1 PK). THE QUINOL PHOSPHATE OXIDN., ACCOMPANIED BY THE FORMATION OF RESPECTIVE QUINONES, CAN BE CONVENIENTLY FOLLOWED BY UV SPECTROSCOPY AS THE SPECTRA OF THE KETONES FORMED ARE DIFFERENT FROM THOSE OF THE REAGENTS. THE PK (20DEGREES), ABSORPTIVITY, AND ABSORPTION MAX. ARE GIVEN FOR 1,4,BENZOQUINOL DIMETHYL PHOSPHATE, 2,METHYL,1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE, 2,3,DIMETHYL, 1,4,NAPHTHOQUINOL DIETHYL PHOSPHATE, 2,3,DIMETHYL, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE AND 2,3,DICHLORO, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE.

UNCLASSIFIED

USSR

UDC 541.49:546.791.6 + 547.466 + 661.7

SEKGEYEV, G. M., and KORSHUNOV, I. A.

"Characteristics of the Reaction of Uranyl Ion With Aminoacids and Complexons"

Leningrad, Radiokhimiya, Vol 15, No 4, 1973, pp 621-623

Abstract: The aim of this study was to find the relationship between the stability of the complex ions of hexavalent uranium and characteristic structures of some aminoacids and complexons. The stability of several aminoacid complexes of uranyl have been tabulated. As the number of methylene groups in the aminoacids is increased, so is the destabilization effect of the complex ion. The stability of the complexes of similar polydentant reagents is increased with increased number of chelating rings: glycinate, nitrilotriacetate, ethylenediaminodiacetate, as far as their stability is concerned. Maximum saturation of the coordination capacity of a metal ion occurs in case of uranyl ethylenediaminodiacetate.

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UDC 541.49:546.841

USSR

SERGEYEV, G. M., ASTRASHKOVA, L. G., and YAGODINSKAYA, N. N.

"Complexation of Th(IV) With Acetic Acid by pH-Potentiometric Titration"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 392-393

Abstract: A study was made of complexation of Th(IV) with acetate ions by pH potentiometry. To prevent hydrolysis of the metal, thorium nitrate is dissolved in $5 \cdot 10^{-3}$ M HNO_3 . Total concentration of thorium ions in all experiments was $5 \cdot 10^{-3}$ M, and the concentration of acetate ions varied from $5 \cdot 10^{-3}$ to $7.5 \cdot 10^{-2}$ M. Titration was conducted with carbonate-free potassium hydroxide in a thermostated cell at $t = 25 \pm 0.05^\circ$. Preliminary experiments showed that in the ligand concentration range $5 \cdot 10^{-3}$ to $2 \cdot 10^{-2}$ M, formation constants of complex thorium ion did not remain constant, evidently owing to competing hydrolysis. However, at acetate ion concentrations higher than $4 \cdot 10^{-2}$ M, stability constants of complexes were constant within limits of experimental error.

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1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV76
 TITLE--COMPLEXING OF THORIUM IV WITH ACETIC ACID STUDIED BY POTENTIOMETRIC
 TITRATION -U-
 AUTHOR--(031)-SERGEYEV, G.M., ASTRASHKOVA, L.G., YAGODINSKAYA, N.N.
 COUNTRY OF INFO--USSR
 SOURCE--RADIOKIMIYA 1970, 12(2), 392-3
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--THORIUM COMPOUND COMPLEX COMPOUND, ACETIC ACID, POTENTIOMETRIC
 TITRATION
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAHE--3002/1229 STEP NO--UR/0186/70/012/002/0392/0393
 CIRC ACCESSION NO--AP0128645
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 008

CIRC ACCESSION NO--AP0128645

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF TH, ACETATE COMPLEXES TH,ACO PRIME3 POSITIVE (LOG K SUB1 EQUALS 3.1) AND TH(ACO) SUB2 PRIME2 POSITIVE (LOG K SUB2 EQUALS 3.2) (K IS STABILITY CONST.) IS STUDIED BY POTENTIOMETRIC TITRN. WITH KOH OF A C SUBTH PRIME4 POSITIVE SLIGHTLY ACID SOLN. HAVING PH IS LESS THAN OR EQUAL TO 3, TH PRIME4 POSITIVE CONC. 0.005M, ACETATE ION CONC. 0.005-0.075M, TEMP. 25.0 DEGREES, IONIC STRENGTH 0.5 (KNO SUB3), AND HOAC DISSOCN. CONST. (3.04 PLUS OR MINUS 0.03) TIMES 10 PRIME NEGATIVE5. THE K SUB1 AND K SUB2 WERE DETD. FOR ACETATE CONCNS. OF 0.04, 0.05, AND 0.075M.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--POLYMERIZATION OF EPICHLOROHYDRIN WITH TRIETHYLALUMINUM, WATER,
TRIFLUOROETHANOL OR TRIETHYLALUMINUM, TRIFLUOROETHANOL CATALYTIC SYSTEMS
AUTHOR--(03)-PONOMARENKO, V.A., DEBORIN, M.G., SERGEYEV, I.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 925-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYMERIZATION, EPICHLOROHYDRIN, ORGANICALUMINUM COMPOUND,
CATALYST, FLUORINATED ORGANIC COMPOUND, FROST RESISTANCE, ETHANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/L313 STEP NO--UR/0062/70/000/004/0925/0926
CIRC ACCESSION NO--AP0134087

2/2 G3C

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134987

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. THE POLYMN. OF EPICHLOROHYDRIN AT 20DEGREES IN THE PRESENCE OF 0.1PERCENT 1.0:0.3:0.2 ALET SUB3, H SUB2 O,CH SUB3 CH SUB2 OH CATALYST MIXT. GAVE 65PERCENT POLYMER OF MOL. WT. 154,000. THE POLYMN. WITH 0.1PERCENT 1:0.8 AL, ET SUB3, CH SUB3 CH SUB2 OH GAVE 52PERCENT POLYMER OF MOL. WT. 112,000. THESE POLYMERS WERE LESS THAN OR EQUAL TO 4PERCENT CRYST., HAD LOW GLASS TEMP. AND WERE EXPECTED TO HAVE BETTER COLD RESISTANCE THAN SIMILAR POLYMERS PREPD. WITH ALET SUB3, H SUB2 O, SOLVENT SYSTEMS (BRIT. 848,306). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, USSR.

UNCLASSIFIED