"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE TABULATED FOR HYDROLYSIS OF DMF IN SOLNS. OF HCO SUB2 NA CONTG. NACLO SUB4 OR IN HCO SUB2 H HCO SUB2 NA, AT 80 TO 140DEGREES. THE HYDROLYSIS IS A REACTION OF 1ST ORDER IN RESPECT TO H SUB2 O AND IN RESPECT TO DMF; IT IS CATALYZED BY ACIDS IN THE PRESENCE OF HCO SUB2 H. AT LESS THAN 20 WT PERCENT H SUB2 O IN THE SYSTEM, CATALYSIS BY MOL. HCO SUB2 H PREDOMINATES. AS H SUB2 O CONCN. IS RAISED, CATALYSIS BY H SUB3 O PRIME POSITIVE ALSO INCREASES IN IMPORTANCE. FACILITY: NAUCH. ISSLED. INST. MONOMER. SIN. KAUCH., YAROSLAVL; USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INDIRECT POLAROGRAPHIC DETERMINATION OF PHENOTHIAZINE -U-

AUTHOR-(03)-TURYAN, YA.I., MEKRYUKOVA, T.V., BOGDANOVA, O.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 384-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLAROGRAPHIC ANALYSIS, ORGANIC AZINE COMPOUND, BENZENE DERIVATIVE, NITRATION, ORGANIC SULFUR COMPOUND, DROPPING MERCURY ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0686 STEP NO--UR/0075/70/025/002/0384/0386

CIRC ACCESSION NO--AP0113557

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113557

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS INDIRECT POLAROGRAPHIC METHOD FOR PHENOTHIAZINE ON A DROPPING HG ELECTRODE WAS DEVELOPED. THE METHOD IS BASED ON NITRATION AND OBTAINING THE CATHODIC POLAROGRAPHIC WAVE. THE NITROSOAMINE FORMED GIVES A REDN. WAVE ON A DROPPING HG ELECTRODE WITH E SUBONE HALF EQUALS MINUS 0.93 IN A SUPPORTING ELECTROLYTE OF NA SUB2 SO SUB4 (SATD.) PLUS 0.04M NAOH PLUS 14PERCENT H SUB2 O PLUS 18PERCENT MEOH PLUS 68PERCENT ETOH. TO 1 G OF THE SAMPLE IN HCONME SUB2 OR MEOH, ADD 9 ML MEOH, 2 ML 6M NANO SUB2, AND 1 ML 2N H SUB2 SO. AFTER 10 MIN ADD 4 ML 2.5N NAOH AND DIL. TO 50 ML WITH ETOH. RECORD THE POLAROGRAM IN THE POTENTIAL RANGE OF MINUS 0.5 TO MINUS 1.4V. THE SENSITIVITY OF THE DETN. IS 5 TIMES 10 PRIME NEGATIVE3 PERCENT. THE ERROR IS PLUS OR MINUS 5PERCENT. FACILITY: SCI. RES. INST. MONOMERS. SYN. RUBBERS, YAROSLAYL, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELECTRICAL CONDUCTIVITY OF COMPLEX ZIEGLER CATALYSTS AND THEIR ACTIVITY IN OLEFIN REACTIONS -U-

AUTHOR-(04)-OBESHCHALOVA, N.V., SMIRNOVA, G.A., FELDBLYUM, V.SH., TURYAN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 270-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ALKENE, COMPLEX COMPOUND, CATALYST ACTIVITY, ISOMERIZATION, ORGANOALUMINUM COMPOUND, NICKEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1396 STEP NO--UR/0079/70/040/002/0270/0275

CIRC ACCESSION NO--AP0116843

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116843

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SYSTEM OF ET SUB3 AL SUB2 CL SUB3 WITH NI DI-TERT-BUTYLBENZOATE IN PHCL SOLN. AND CONTG. AN EXCESS OF AL RELATIVE TO NI THE RELATION IS SYMBOLIC OF CATALYTIC ACTIVITY FOR ISOMERIZATION OF 2,METHYL,1,PENTENE TO ELEC. COND. WITH 5 FOLD OR GREATER EXCESS OF AL OVER NI THE COND. OF THE SYSTEM IS GREATER THAN FOUND FOR A LARGE EXCESS OF RALCL SUB2, BUT THE CATALYTIC ACTIVITY IS ABSENT. THE SAME INVERSE EFFECT WAS OBSERVED AFTER THERMAL TREATMENT OF THE CATALYST. THE SYSTEM OF ET SUB3 AL SUB2 CL SUB3 NICL SUB2 SHOWED A SYMBATIC RELATION AMONG CONCN. OF NI, COND., AND CATALYTIC ACTIVITY IN PROPYLENE DIMERIZATION; TREATMENT WITH H RAISED THE COND. AND CATALYTIC ACTIVITY. COND. MAY BE USED AS THE INDEX OF CATALYTIC ACTIVITY ONLY IN CASE OF LARGE EXCESS OF THE ALRCL COMPONENT RELATIVE TO NI SALTS. THIS RULE IS LOST WHEN THE RATIO OF AL TO NI IS LOWERED OR BECAUSE OF HEAT TREATMENT; THIS IS CAUSED BY THE FACT THAT COND. IS THE RESULT OF DISSOCN. OF BOTH ACTIVE CATALYST PARTICLES AS WELL AS OTHER COMPLEXES THAT MAY BE PRESENT. FACILITY: NAUCH.-ISSLED. INST. MONOMEROV SIN. KAUCH., YAROSLAVL, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC[537.226+537.311.33]:[537+535]

TURYANITSA, I. D., KOPERLES, B. M., SLIVKA, V. YU., and CHEPUR, D. V.

"Synthesis and Certain Electrophysical Properties of Indium Chalcoiodides"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 193-197 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE628 by YE. A.)

Translation: The compounds InSI, InSeI, and InTeI were synthesized by direct interaction of the initial components according to the scheme: $2A^{III} + 2B^{VI} + C_2^{VII} \rightleftarrows 2A^{III}{}_B{}^{VI}{}_C{}^{VII}$. The method of producing crystals is described and the parameters of their lattices are presented. The optical transmission and photoconductivity spectra of the crystals obtained were investigated. All compounds have an energy gap of more than 2 ev and possess photosensitivity in the region of the long-wave fundamental absorption edge. At 20° C the specific electrical conductivity of the crystals is 10^{10}-10^{11} ohm·cm. The temperature dependence of electrical conductivity, permittivity, and energy gap reveal no anomalies in the temperature range from -150 to +50°C, which obviously indicates that there are no phase transitions in the given temperature region in the compounds obtained.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

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UDC [537.226+537.311.33]:[537+535]

MUCHICHKA, I. I., SAVCHENKO, N. D., DOVGOSHEY, N. I., TURYANITSA, I. D., CHEPUR, D. V., SLIVKA, V. YU.

"Effect of Temperature on Certain Electrophysical and Optical Properties of $AsS_xSe_{1-x}I$ and $As_xSb_{1-x}SI$ Samples"

V sb. Nekotor. vopr. khimii i fiz. poluprovodnikov slozhn. sostava (Certain Problems in the Chemistry and Physics of Semiconductors of Complex Compositions -- Collection of Works), Uzhgorod, 1970, pp 228-233 (from RZh Fizika, No 12, Dec 71, Abstract No 12Ye1399)

Translation: Compounds of $AsS_xSe_{1-x}I$ were obtained in the vitreous state by a direct synthesis method, and single crystals of $As_xSb_{1-x}SI$ were obtained from the gas phase. The current-voltage characteristics were studied at various temperatures in the range 100-383°K; the photocurrent was determined as a function of wavelength, illumination, and temperature, and the absorption spectra of the samples were measured at different temperatures. Conclusions were drawn on the basis of the data concerning conductivity mechanisms, recombination mechanisms, defect levels, and the temperature coefficient of the width of the forbidden zone. A. Ya. O.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 621.315,592

DOVGOSHEY, N. I., FIRTSAK, Yu. Yu., TURYANITSA, I. D., ZAYACHKOVSKIY, V. P., and MEL'NICHENKO, T. N.

"Production and Some Physical Properties of SbSI and SbSeI Films"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 66-70 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B165)

Translation: The films were produced by the method of discrete explosive vaporization of source material in a unit mounted at the base of the UVR-2 general-purpose vacuum station. Single crystals obtained from the gaseous phase were used as the source material. Vaporization was conducted at a pressure of 10^{-4} mm of mercury on cold and hot mica and glass substrates. X-ray studies showed that specimens deposited on the cold substrates are quasi-morphous, and films obtained on substrates heated to 150-160°C were polycrystalline. Films deposited on substrates heated to 270°C display an excess of SbS_3 and Sb_2Se_3, respectively. Measurements of the electrical conductance were made on films obtained on mica substrates heated to 150-160°C. The temperature dependence of the electrical conductivity for a SbSI film is characterized by a low-temperature linear section with an activation energy

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

DOVGOSHEY, N. I., et al., Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 66-70 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 8B165)

of 0.08 ev and two sections of linear dependence in the region of high temperatures (0-100°C) with activation energies of 0.57 and 0.68 ev. For SbSeI the temperature dependence of electrical conductivity has two linear sections with activation energies of 0.96 and 0.98 ev. The width of the forbidden band $\Delta E = 1.94$ ev is determined by the spectral dependence of the absorption coefficient (K) for SbSI films at room temperature. The absorption edge K is a straight line in the case of the function $K^{1/2} = f(h\nu)$. The function $K^{1/2} = f(h\nu)$ plotted for SbSeI gives a width of the forbidden band equal to 1.73 ± 0.05 ev and indicates the presence of interzonal indirect junctions. 9 ref. I. I.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PREPN. OF BISMUTH TELLURDIE IODIDE, AND SOME OF ITS OPTICAL PROPERTIES -U-

AUTHOR-(05)-CHEPUR, D.V., GORAK, YA.A., KOVACH, D.SH., TURYANITSA, I.D., BORETS, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG, MATER. 1970, 6(2), 385-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BISMUTH, TELLURIDE, IODIDE, OPTIC PROPERTY, CHEMICAL PURITY, CHEMICAL SYNTHESIS, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1345 STEP NO--UR/0363/70/006/002/0385/0386

CIRC ACCESSION NO--AP0121838

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121838

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BITEI SINGLE CRYSTALS WERE PREPD. AND THE CHARACTERISTIC ABSORPTION IN THE EDGE REGION WAS STUDIED. HIGH PURITY STARTING MATERIALS WERE USED FOR THE SYNTHESIS. BITEI WAS SYNTHESIZED FROM THE ELEMENTS TAKEN IN THE STOICHIOMETRIC RATIO AT 480DEGREES. THE SYNTHESIS IN EVACUATED QUARTZ AMPULS TOOK SEVERAL DAYS. THE SINGLE CRYSTALS WERE IN THE FORM OF EASILY CLEAVING PLATELETS. X RAY ANAL. CONFIRMED THAT THEY BELONG TO HEXAGONAL SYSTEM WITH A EQUALS 4.29 ANGSTROM; C EQUALS 6.75 ANGSTROM. PRELIMINARY STUDY OF THE ABSORPTION OF NONPOLARIZED IR SHOWED THAT CRYSTALS SIMILAR TO 10 MU THICK TRANSMIT SMALLER THAN OR EQUAL TO 10PERCENT. BECAUSE ABSORPTION INCREASES TOWARDS THE LONGER WAVELENGTHS, IT MAY BE CAUSED BY HIGH CONCN. OF FREE CARRIERS. THE DEPENDENCE OF THE ABSORPTION COEFF. ON THE SQUARE OF THE WAVELENGTH SEEMS TO CONFIRM THIS SUGGESTION. THE OBSD. ABSORPTION EDGE COULD BE CAUSED BY SIMPLE ALLOWABLE TRANSITIONS BETWEEN THE BANDS. FACILITY: UZHGOROD. GOS. UNIV., UZHGOROD, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

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USSR UDC [537.226+537.311.33]:[537+535]

BERCHA, D. M., ZAYACHKOVSKIY, M. P., SLIVKA, V. YU, LOVGA, I. V., TURYANITSA, I. D., AND CHEPUR, D. V.

"Effect of Piezoresistance in BiSeI Crystals"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 53-58 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE651 by G. G. RUDOVOL)

Translation: An investigation was made of the effect of piezoresistance and electrical conductivity in acicular BiSeI single crystals, as well as their temperature dependence in the 270-115° K temperature range. It was established that the piezoresistance coefficient is complexly (peakwise) temperature-dependent. It is suggested that the semiconductor has several donor levels, which are depleted in turn. This results in several peaks, dependent on the number of impurity levels. However, the peak found in the 130-140° K temperature region is due to a phase transition of the second kind. In the 230° K region the piezoresistance does not involve a phase transition but is due to a change in the activation energy of impurity levels. Such an assumption is confirmed by the fact that in experimental studies a shift in the minimum is observed from specimen to specimen, while the minimum remains constant at T=133° K.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 011 UNCLASSIFIED

TITLE--OPTICALLY ACTIVE 1,P,NITROPHENYL,2,AMINO,1,3,PROPANEDIOL -U-

PROCESSING DATE--13NOV70

AUTHOR-(04)-MAYRANOVSKIY, S.G., GANGRSKIY, P.A., TURYANSKAYA, YE.G., LISHCHETA, L.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,382

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

DATE PUBLISHED--03MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG PRODUCTION, OPTIC ACTIVITY, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1352

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

CIRC ACCESSION NO--AA0128759

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. IS PREPD. BY REDUCING P,NITRO,ALPHA,ACETAMIDO,BETA, HYDROXYPROPIOPHENONE WITH ISO,PROH IN AN ACID MEDIUM IN THE PRESENCE OF AL(OPR,ISO) SUB3,ALCL SUB3,CCL SUB4. FACILITY: KHIMIKO-FARMATSEVTICHESKIY ZAVOD, AKRIKHIN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC none

TURYANSKIY, V. P., LEVIN, M. M.

"An Installation for Measuring the Phase Shift Introduced by a Flat Dielectric Plate in the Three-Centimeter Band"

Tr. NII introskopii (Works of the Scientific Research Institute of Internal Inspection), 1970, vyp. 4, pp 41-42 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8A308)

Translation: A plane-parallel sheet of dielectric has a permittivity of 10 or less and a loss tangent of 0.1 or less, and is studied transillumination in a two-channel phase meter. The sheet is mo between the antennas of the instrument and the inserted phase shi changes as a consequence of the variation in the characteristics of the sheet and the conditions of the experiment. The error in measurement of the change in phase displacement is approximately one degree. The installation can be used for checking flat sheets of dielectric during production, in checking the blanks for lens antennas, for quality control of construction materials, in measuring the fields scattered by various bodies, and in physical research. A. K.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

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ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHASHVILI, K. Z., SHUKEYLO, I. A., BOYKO, S. N., KOMAR, YE. G., [illegible]REYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radioelectronic systems for acceleration process control and generation of

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 621.371:551.510.535

GUREVICH, A. V., PARIYSKAYA, L. V., TUSHENTSOVA, I. A., and TSEDILINA, Ye. Ye.

"Trapping Radio Waves in the Ionospheric Waveguide Channel"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972, p 354 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A334)

Translation: Pickup due to nonlinear processes and changes in the ionosphere along the beam trajectory (i.e., due to the longitude-latitude of the ionosphere nonuniformity) is studied. The frequency regions and radiation angles at which pickup occurs are investigated. For the specific model of a quiet ionosphere, the dependence of trapping conditions on the geographical coordinates of the radiation, the time of day, and the direction of the radiation, are examined. Resume

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

Thermomechanical Treatment

UDC: 669.14:621.787

TUSHINSKIY, L. I., TUSHINSKAYA, K. I., TIKHOMIROVA, L. B., and HULIKOV, I. L.,
Novosibirsk Institute of Railroad Transportation Engineers

"Thermomechanical Treatment of Carbon Steel With Diffusion Transformation of Austenite"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 116-118

Abstract: This paper concerns the thermomechanical treatment of carbon steel with diffusion transformation of austenite to finely disperse pearlite. It was found that austenite deformation makes it possible to raise the austenization temperature to a level which increases both the yield point and tensile strength to 14 to 18 and 18--20 kg/mm^2, respectively, without reduction in plasticity. Comparison of treatment specifications shows that a lamellar structure, as opposed to a granular structure, has a higher tensile strength (by 20 kg/mm^2) at somewhat higher plasticity values. Figures in the original article show the effect of the cooling rate, temperature, and extent of deformation on the mechanical properties of U8A steel subjected to high-temperature thermomechanical treatment with diffusion transformation, the mechanical properties of U8A steel with granular and lamellar structures, and the effect of austenization temperature and austenite deformation on the dimension of a troostite colony of treated U8A steel.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 669.15-194:669.74-15:539.389.3

TUSHINSKIY, L. I., TIKHOMIROVA, L. B., and MURATOV, V. M.,
Novosibirsk Electro-technical Institute

"Precipitation Hardening of 65G Steel "

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 2, 1970, pp 121-122

Translation: The article presents results of precipitation hardening of 65G steel after austempering and temper hardening. It was established that precipitation hardening 65G steel is expedient after austempering inasmuch as the yield point in this case increases by 16 to 18% while reduction of ductility is negligible.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR UDC 669.15'74-194:669.14.018.27

TUSHINSKIY, L. I., TIKHOMIROVA, L. B., and MURATOV, V. M., Novosibirsk Electrical Engineering Institute

"Deformation Aging of 65G Steel Hardened by Thermomechanical Working"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1970, pp 67-68

Abstract: A study was made of deformation aging (DA) of 65G steel after thermomechanical working. Deformation aging of 65G steel should be performed in combination with isothermal austenitic conversion, since the yield point is increased by 27 kg/mm^2 (18%) with a slight decrease in plasticity. The optimal mode of deformation aging of 65G steel is deformation (3%) and aging at 250°C.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

Thermomechanical Treatment

UDC: 669.14:621.787

TUSHINSKIY, L. I., TUSHINSKAYA, K. I., TIKHOMIROVA, L. B., and MULIKOV, I. L.,
Novosibirsk Institute of Railroad Transportation Engineers

"Thermomechanical Treatment of Carbon Steel With Diffusion Transformation of Austenite"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 116-118

Abstract: This paper concerns the thermomechanical treatment of carbon steel with diffusion transformation of austenite to finely disperse pearlite. It was found that austenite deformation makes it possible to raise the austenization temperature to a level which increases both the yield point and tensile strength to 14 to 18 and 18--20 kg/mm^2, respectively, without reduction in plasticity. Comparison of treatment specifications shows that a lamellar structure, as opposed to a granular structure, has a higher tensile strength (by 20 kg/mm^2) at somewhat higher plasticity values. Figures in the original article show the effect of the cooling rate, temperature, and extent of deformation on the mechanical properties of U8A steel subjected to high-temperature thermomechanical treatment with diffusion transformation, the mechanical properties of U8A steel with granular and lamellar structures, and the effect of austenization temperature and austenite deformation on the dimension of a troostite colony of treated U8A steel.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC: 621.391.82:625.1

PANTYUKHIN, Yu. P., TUSHKANOV, V. F.

"Investigation of Radio Interference in the UHF Band Under the Conditions of a Large Railway Terminal"

Nauchn. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works. Omsk Institute of Railway Transportation Engineers), 1970, 119, pp 101-104 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A231)

Translation: The article raises the problem of evaluating radio interference arising under conditions of electrified railroads as a random process. Data are given from an experimental study of the fine structure of radio interference in the meter wave band arising under the conditions of a large rail terminal. Three illustrations, one table. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

Electromagnetic Wave Propagation

USSR

UDC: 621.391.82:621.317.743

PANTYUKHIN, Yu. P., TUSHKANOV, V. F.

"Comparative Measurements of the Field Strength of Radio Interference in the UHF Band With Vertical and Horizontal Polarization"

Nauch. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works. Omsk Institute of Railway Transportation Engineers), 1970, 119, pp 105-110 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A225)

Translation: The paper presents the results of comparative measurements of the quasi-peak value of the field strength of radio interference in the meter wave band with vertical and horizontal polarization. It is shown that there is a slight increase in the quasi-peak value of field strength with vertical polarization. This increase is most noticeable on low interference levels. Four illustrations, bibliography of one title. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 021

UNCLASSIFIED

TITLE--ANALYSIS OF GOLD AND IODINE IMPURITIES IN SILICON WHISKERS -U-

PROCESSING DATE--09OCT70

AUTHOR-(03)-AGIYEVSKIY, D.A., MIRANSKIY, I.A., TUSHKOVA, R.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 418-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--IODINE, GOLD, CHEMICAL ANALYSIS, SILICON, CRYSTALLIZATION, WHISKER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1897

STEP NO--UR/0363/70/006/003/0418/0420

CIRC ACCESSION NO--AP0115716

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 021

UNCLASSIFIED

CIRC ACCESSION NO--AP0115716 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF CERTAIN IMPURITIES ON THE GROWTH PROCESS OF SI WHISKERS IS DISCUSSED, AND THE RESULTS OF RADIOACTIVE ANAL. OF THE GROWN CRYSTALS RELATIVE TO THE I AND AU PRESENT ARE PRESENTED. THE AMPUL METHOD WITH THE USE OF CHEM. TRANSPORT REACTIONS WAS EMPLOYED FOR GROWING THE CRYSTALS. THE TOTAL PARTIAL PRESSURE IN THE EXPTS. WAS 80 MM HG, AND THE TEMP. DROP WAS 1100-950DEGREES. THE ADDN. OF A SMALL AMT. OF AU (1-2 MG IN THE FORM OF FOIL WITH A PURITY OF 99.99PERCENT) TO THE WEIGHED PORTION OF SI WEIGHING 2-3 G STIMULATES THE GROWTH OF FILAMENTARY SI CRYSTALS. AT A TRANSFER RATE OF 200-300 MG PER HR, THE GROWING PROCESS CONTINUES FOR 40-50 MIN. IN THIS CASE, A LARGE AMT. OF WHISKER CRYSTALS APPEARS IN THE CRYSTN. ZONE, GROWING ALONG THE ENTIRE SURFACE OF THE AMPUL. FURTHER, CERTAIN IMPURITIES DO NOT ENHANCE THE GROWTH OF THE WHISKERS. THUS, A SMALL AMT. OF O OR H SUB2 O VAPORS ENTIRELY INTERRUPTS EVEN THE SI TRANSFER PROCESS. TO BRING OUT THE ROLE OF AU IMPURITY IN THE GROWTH PROCESS OF SI WHISKER CRYSTALS, IT IS IMPORTANT TO SHOW THE PRESENCE OF AU IN THEIR COMPN. AND TO DET. ITS CONTENT. OF INTEREST ALSO IS THE QUESTION AS TO THE CONTENT OF THE TRANSPORTING AGENT IN THE CRYSTALS GROWN. THESE QUESTIONS ARE DISCUSSED USING THE RADIOACTIVATION ANAL.

FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FOOD PROCURING CONDITIONED REFLEXES OF RABBITS AFTER INJECTION OF RIBONUCLEASE INTO DIFFERENT REGIONS OF THE HIPPOCAMPAL DORSAL AREA -U-

AUTHOR-(02)-TUSHMALOVA, N.A., MELKOVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP 519-523

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RIBONUCLEASE, BRAIN, CONDITIONED REFLEX, FOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0383 STEP NO--UR/0247/70/020/003/0519/0523

CIRC ACCESSION NO--AP0121070

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 024 UNCLASSIFIED

CIRC ACCESSION NO--AP0121070 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPERIMENT WAS AIMED AT STUDYING THE INFLUENCE OF RIBONUCLEASE (300 GAMMA) INJECTED INTO THE BRAIN THROUGH CHRONICALLY IMPLANTED CANULAE ON THE FOOD PROCURING CONDITIONED REFLEXES OF RABBITS. THE NATURE OF THE INFLUENCE DEPENDS ON THE LOCATION OF THE CANULAE IN THE HIPPOCAMPUS. THE INJECTION OF RIBONUCLEASE INTO THE UPPER PARTS OF THE PYRAMIDAL LAYER OF THE DORSAL HIPPOCAMPUS RESULTS IN 100PERCENT OF CASES IN A COMPLETE INHIBITION OF CONDITIONED REFLEXES; THE INJECTION OF THE ENZYME INTO THE LOWER PARTS OF THE SAME HIPPOCAMPAL REGION JUST LEADS TO INCREASED LATENCIES OF CONDITIONED REACTION, WHILE INJECTION INTO THE FASCIA DENTATA AREA DOES NOT APPRECIABLY AFFECT THE RABBIT'S CONDITIONED ACTIVITY.

FACILITY: CHAIR OF PHYSIOLOGY OF HIGH NERVOUS ACTIVITY, LOMONOSOV UNIVERSITY, MOSCOW.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FOOD PROCURING CONDITIONED REFLEXES OF RABBITS AFTER INJECTION OF RIBONUCLEASE INTO DIFFERENT REGIONS OF THE HIPPOCAMPAL DORSAL AREA -U-

AUTHOR-(02)-TUSHMALOVA, N.A., MELKOVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP 519-523

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RIBONUCLEASE, BRAIN, CONDITIONED REFLEX, FOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0383 STEP NO--UR/0247/70/020/003/0519/0523

CIRC ACCESSION NO--AP0121070

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 024

UNCLASSIFIED

CIRC ACCESSION NO--AP0121070 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPERIMENT WAS AIMED AT STUDYING THE INFLUENCE OF RIBONUCLEASE (300 GAMMA) INJECTED INTO THE BRAIN THROUGH CHRONICALLY IMPLANTED CANULAE ON THE FOOD PROCURING CONDITIONED REFLEXES OF RABBITS. THE NATURE OF THE INFLUENCE DEPENDS ON THE LOCATION OF THE CANULAE IN THE HIPPOCAMPUS. THE INJECTION OF RIBONUCLEASE INTO THE UPPER PARTS OF THE PYRAMIDAL LAYER OF THE DORSAL HIPPOCAMPUS RESULTS IN 100PERCENT OF CASES IN A COMPLETE INHIBITION OF CONDITIONED REFLEXES; THE INJECTION OF THE ENZYME INTO THE LOWER PARTS OF THE SAME HIPPOCAMPAL REGION JUST LEADS TO INCREASED LATENCIES OF CONDITIONED REACTION, WHILE INJECTION INTO THE FASCIA DENTATA AREA DOES NOT APPRECIABLY AFFECT THE RABBIT'S CONDITIONED ACTIVITY.

FACILITY: CHAIR OF PHYSIOLOGY OF HIGH NERVOUS ACTIVITY, LOMONOSOV UNIVERSITY, MOSCOW.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUSNOV, Yu. I.

UDC: 533.95:537.84

"Dispersion Properties of Plasma in Shock Tubes (200-7300 MHz)"

Izv. Tomsk. politekhn. in-ta, 1972, 213, pp 128-134 (from RZh-Fizika, No 6, Jun 73, abstract No 6G55)

Translation: The paper presents the results of a study of the dependence of plasma permittivity in shock tubes on the frequency. The variation of the complex coefficient of reflection of an electromagnetic wave from a plasma moving along a coaxial tube in argon is measured in the range of shock wave velocities of V = 2.0-3.2 km/s (Mach number M = 6-10) for initial pressures p = 2.5 and 10 mm Hg, and in air for V = 2.8-4.1 km/s (M=8-12), P_0= 5 and 10 mm Hg. The measured variation with frequency of the real and imaginary parts of $\tilde{\varepsilon}$ showed satisfactory agreement with the theoretical calculations at ionized air temperatures of $3\text{-}5\cdot10^3$ K and argon temperatures of $4\text{-}10\cdot10^3$ K in the frequency range of 200-7300 MHz.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 620.193.41

TUSOV, G. P., GOCHALIYEVA, YE. P. and FANDEYEVA, M. F., Scientific Research Physicochemical Institute imeni L. Ya. Karpov

"Cathodic Behavior of Titanium in Acid Solutions"

Moscow, Zashchita Metallov, Vol 10, No 1, Jan-Feb 74, pp 41-44

Abstract: The authors studied the cathodic passivation of VT-1 titanium in 3n H_2SO_4. In the anodic area, the passivity of titanium is related to the formation of passivating oxide films, while in the cathodic area the form of oxygen passivation is different. Apparently, the reaction of dissolution of titanium in the cathodic area is passivated by surface oxygen compounds, the degree of oxidation of the surface changing in equilibrium upon transition from one potential to another. The experimental material presented speaks in favor of the explanation of the cathodic passivity of titanium by the oxide film and allows the degree of passivity to be preliminarily related to the percentage of filling of the surface with electrochemically active oxygen compounds.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 543.272.6

TUSTANOVSKIY, V. T., ANDRYUSHCHENKO, V. I., VOL'GENUT, A. A., PRONEHAN, I. M., State Scientific Research and Planning Institute of the Rare-Metal Industry, Moscow

"The Neutron-Activation Method of Rapid Determination of the Carbon Content"

Moscow, Doklady Akademii Nauk SSR, Vol 196, No 3, 1971, pp 570-572

Abstract: The activation determination of carbon on the basis of a millisecond isotope permits hundreds of parallel cycles of radiation and measurement to be obtained in a short interval or time ;this compensates for the insignificant value of the activation-process cross section. At the same time the background should not increase with the passage of time. The recording system described in the article, the design features of the radiation sensor, and the use of an amplitude discriminator tuned to the anomalously high radiation energy of the isotope B^{12} permits this requirement to be satisfied. This method permits rapid and sufficiently precise determination of the carbon content in steels, hard alloys, and other materials without destruction of the specimens. This methods is most widely applicable in ferrous metallurgy, as well as in the control of finished products made of hard alloys, high-speed and tool steels. Two figures, 3 bibliographic entries.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUSUPBEKOV, M. R., Candidate of Technical Sciences

UDC: 621.001.57:52

"Digital Computer Modeling of an Automatic Line"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 8, 1970, pp 41-43

Abstract: The article describes a model for the operation of an automatic line consisting of n sections with (n - 1) stores, compiled with the aid of a "Minsk-22" digital computer. The model, consisting of 19 blocks, makes it possible to obtain experimental curves on the productivity of the automatic line according to storage capacity. The curves make it possible to give substantiated storage capacity designations. The model is based on a method of statistical tests which consists essentially in simulating the chance character of trouble-free operating time and the time it takes to eliminate a failure for sections and stores with a given density. A block diagram of the model is given. It takes 3 minutes of "Minsk-22" machine time to model the monthly two-shift operation of a two-section automatic line, 5 minutes for a three-section, 7 minutes for a four-section automatic line.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC: 661.183.45

TUTAYEVA, N. L., KOMAROV, V. S., Institute of General and Inorganic Chemistry, Academy of Sciences, Belorussian SSR

"Dynamic Adsorption of Water Vapors by Stationary Phase of Clay Adsorbents"

Minsk, Vestsi Akademii Navuk BSSR, Seriya Khimichnykh Navuk, No 1, 1970, pp 24-28

Abstract: Since the success of many industrial processes depends upon the proper choice of adsorbent the properties of which are known beforehand, the authors investigated new combinations and methods of activation of clays which admit of a full determination and regulation of their structure. The authors prepared a sample of clay from Obol and four samples from Azkamar (Uzbek SSR) on caolin base and compared their dynamic sorptive activity with mercial silica gels of all degrees of porosity using water vapor in gasor air as the moving phase. The natural clays exceeded the coarse- and medium-grained silica gel in their dynamic absorption of water vapor. The results showed that the natural clays, when properly treated, can be used as effective driers of gases.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

DZIDZIGURI, A. A., SHUBITIDZE, K. C., TUTBERIDZE, L. I.

UDC 532.5:621.22

"On the Stability of the Operating Modes of Centrifugal Pumps"

V sb. Gorn. mekh. i rudnich. aerologiya (Mining Mechanics and Ore Aerology -- Collection of Works), Tbilisi, "Metsniyereba", 1972, pp 37-42 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B754)

Translation: The stability of the operating modes of a system consisting of a centrifugal pump, a pressure line, a certain air volume, and a gate is investigated. Two differential equations are compiled for the nonstationary delivery motion in the line and boundary conditions are set up at the ends of the line. Appropriate simplifications of the initial equations and boundary conditions are introduced for various versions of the system and approximate stability criteria are obtained. P. S. Solomakhova.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTBERIDZE, N.

"What Is the City Breathing?"

Tbilisi, Zarya Vostoka, 5 Apr 70, p 3

Abstract: Pure air as a guarantee of health, is axiomatic. But today it assumes a vital meaning; it is a call, an appeal: safeguard the purity of the air - it is in danger. Scientists are warning us of a possible biological cataclysm. Lack of consistent cooperation of the various authoritative agencies is demonstrated. The director of an iron-alloy works is asked why he puts hundreds of tons of precious minerals and metals into the clouds of fumes, which could be filtered, and replys that he has had the filter since 1964, but the essential part is lacking. It could not be used, and now it is rusted. In response to demanding questions put to various industries and various responsible bodies, the author got similar irresponsible answers. The scientists in the various educational institutes have already developed the methods and means of preventing air pollution, but there is no one to put them into practical operation. Scientists

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTBERIDZE, N., Tbilisi, Zarya Vostoka, 5 Apr 70, p 3

should be placed in various commissions and made responsible participants in the fight for purity of the air. Mobilization of the whole arsenal of powers and means is necessary so that people living in cities and villages can take a full breath of fresh air.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

YUTSIS, A. P., and TUTLIS, V. I., Vil'nyus State University imeni V. Kapsukas

UDC 539.182

"General Examination of Matrix Elements of Operators of Atomic Magnitudes Using Nonorthogonal Radial Orbitals"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, Vol XII, No 1, 1972, pp 5-17

Abstract: A simplification of formulas for matrix elements of operators in the transition from nonorthogonal to orthogonal radial orbitals is discussed. In previous papers methods are given for calculating the matrix elements of operators that are diagonal relative to the configurations, a method was given for calculating the integral of overlap, and expressions were obtained for matrix elements of operators between two different configurations. This paper discusses cases in which complex configurations decay into groups of shells relative to the orbital quantum number if the radial orbitals are nonorthogonal inside these groups. It is noted that orthogonal radial operators are a particular case of complex configurations when the groups contain only one shell. The mathematical apparatus is generalized for the case in which the groups contain an arbitrary number of shells.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 023

UNCLASSIFIED

TITLE--SOLDER FOR SOLDERING ELECTRONIC EQUIPMENT -U-

PROCESSING DATE--20NOV70

AUTHOR-(05)-TLTOASKAYA, N.N., KOROLEVA, S.P., YUSHKINA, YE.T., PODVIGINA, O.P., CHERNOV, O.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,139

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

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, ELECTRONICS AND ELECTRICAL ENGR,

TOPIC TAGS--CHEMICAL PATENT, ELECTRONIC EQUIPMENT, SOLDER, CHEMICAL COMPOSITION, COPPER, NICKEL, GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1829

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

CIRC ACCESSION NO--AA0132094

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 023

CIRC ACCESSION NO--AA0132094 UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- PROCESSING DATE--20NOV70

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ABSTRACT. THE TITLE SOLDER, BASED ON CU,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 678.762.2-134.622:678.074:620.193.64

TUTORSKIY, I. A., SHATALOV, V. P., KONDRAT'EV, A. N., and FINKEL', E. E.,
Voronezh branch of the USSR Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev, Moscow Institute of Chemical Technology imeni M. V. Lomonosov

"The Effects of Gamma-Radiation on the Solubility and Mechanical Properties of Butadiene-styrene Block-copolymers"

Moscow, Kauchuk i Rezina, No 11, 1973, pp 21-23

Abstract: The effects of doses for 0-800megarad units of gamma radiation were observed in poly-styrene-polybutadiene block copolymers containing 30%, 50%, and 85% styrene. It was found that the solubility in benzene and the viscosity of polystyrene are unaffected by the radiation at these levels, while solubilities of the block-copolymers decrease with increasing doses of radiation, and viscosities show a slight decrease with increasing doses dose of gamma radiation at which gelation begins rises as the amount of styrene increases, relative elongation of the block-copolymers decreases as dosage increases, while shear strength at 50% elongation increases. The fact that polybutadiene both in the homopolymer and the copolymer undergoes radiation-induced cross-linking, while polystyrene does not is used to

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTORSKII, I. A., et al., Kauchuk i Rezina, No 11, 1973, pp 21-23

explain these effects. It was also found that G values are independent of the amount of styrene in the copolymer, indicating that styrene does not protect polybutadiene from radiation effects.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 011

UNCLASSIFIED

TITLE--INTERACTION OF POLYISOPRENE WITH O,MONOPERPHTHALIC ACID -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-DOGADKIN, B.A., TUTORSKIY, L.A., KHODZHAYEVA, I.D.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 315-320

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOPRENE, SQUALENE, NATURAL RUBBER, PHTHALIC ACID, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0190

CIRC ACCESSION NO--AP0120888

STEP NO--UR/0069/70/032/003/0315/0320

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 011

CIRC ACCESSION NO--AP0120888 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE REACTION OF ORTHO MEONPERPHTHALIC ACID (MPPA) WITH SQUALENE AND NATURAL RUBBER HAVE BEEN STUDIED IN THE TEMPERATURE RANGE FROM NEGATIVE25 TO 20DEGREES AT VARYING CONCENTRATIONS AND RATIOS OF REACTANTS. THE REACTION RATE IS DESCRIBED BY A SECOND ORDER EQUATION. THE RATE CONSTANTS AND ACTIVATION ENERGY HAVE BEEN CALCULATED. THE REACTION WITH SQUALENE PROCEEDS IN TWO STEPS CORRESPONDING TO THE INTERACTION WITH THE PERACID OF TERMINAL AND INTERNAL DOUBLE BONDS. THE KINETIC CURVES FOR THE REACTION OF MPPA WITH RUBBER IN A BINARY MIXTURE CCL SUB4 DIOXANE ARE ANOMALOUS.

FACILITY: MOSKOVSKIY INST. TONKOY KHIMICHESKOY TEKHNOLOGII IM. M. V. LOMONOVOVA.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTOV, A. F.

"Problems of Automation of the Input of Information to Computer"

Metody i Sistemy Obrab. Eksperim. Inform. [Methods and Systems for Processing of Experimental Information -- Collection of Works], Kiev, 1973, No 37, pp 230-236 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V627).

Translation: An automatic reading machine with a "ChARS" shift register allows 29 letters of the Russian alphabet, 10 typed numerals as produced by an Optima typewriter and the symbols for arithmetic operations, etc. to be read -- 52 characters in all. The reliability is indicated by an error probability of not over 10^{-5}. The machine reads at a rate of about 200 characters per second.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

TUTOV, V. I.

Selected Translations of Metallurgy SPRS 58619 30 March 1973 (from Fizika Metallov i Metalloredeniye Vol. 34, # 6, 1972

UDC 669.018.5 + 539.21

ON THE ELECTRICAL CONDUCTIVITY OF DIRECTIONALLY CRYSTALLIZED COMPOSITION Al--Al_3Ni

V. Ye. Semenenko, A. I. Somov, and V. I. Tutov, Khar'kov State University imeni A. M. Gor'kiy, Physics Engineering Institute of the Ukrainian SSR Academy of Sciences, submitted to press 19 May 1972 pages 1317-1319

At the present time considerable attention is being devoted to the study of composition materials, among which materials which have obtained directional crystallization of alloys of a eutectic composition [1--6] occupy a notable place. Quite a large number of works are known devoted to the development of various methods of obtaining and investigating the effect of the parameters of growth on the microstructure and mechanical properties of the composition [7--11]. However, the physical properties of such systems have been inadequately studied. Compositions based on aluminum alloys [5, 12, 13], having high values of specific strength and specific modulus of elasticity, are of special interest.

In this work the results of an investigation of the electrical conductivity of an Al--Al_3Ni alloy of eutectic composition are given, obtained by the method of directional crystallization.

As the initial materials, zone-purified aluminum was used, with a purity of 99.9996% with a residual resistance $R_{300°K}/R_{4.2°K}=5650$ and nickel of 99.99% purity with a residual resistance $R_{300°K}/R_{4.2°K}=590$. The eutectic system was unidirectionally crystallized according to the Chokhral'skiy method with the following rates of withdrawal of the ingot from the melt: 14; 24; 90; 180; 360; 720; and 1490 millimeters per hour.

At all rates of growth a primary mutual connection of the interphase between the phases of Al and Al_3Ni was observed, with a direction of growth, which may be described in the following manner:

interface	$\{001\}_{Al_3Ni} \parallel \{331\}_{Al}$
direction of growth	$\parallel \langle 010\rangle_{Al_3Ni} \parallel \langle 100\rangle_{Al}$

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Figure 1. Microslide of a specimen of Al--Al_3Ni grown at a rate of growth v=90 millimeters per hour (longitudinal section); x 1250.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 547.567.5+547.26'118

TUTOV, YE. A., AVBEYENKO, A. P., and MEKH, A. YA.

"The Reaction of Substituted p-Quinonmonoamines with Di(chloralkyl) Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2577-2578

Abstract: The title reaction occurs by the 1-6 addition and leads to the formation of dichloralkyl [4-arensulfonamidophenyl(napthyl)] phosphates. The reaction of the unsubstituted dialkylphosphates occurs with more difficulty and at a higher temperature than the analogous reaction with the substituted compounds. IR spectra of the products showed bands at 3160, 1349, 1176, 1248, and 1033 cm-1, characteristics of the NH, SO_2, P — O — Ar, P — O — Alk groups respectively.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 027 UNCLASSIFIED

TITLE--ELECTRONIC APPARATUS FOR THE RAPID IDENTIFICATION OF CHARGED PARTICLES -U-

PROCESSING DATE--16OCT70

AUTHOR-(02)-DOLVA, G.P., TUTUBALIN, A.I.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 112-15

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--CHARGED PARTICLE, KINETIC ENERGY, SCINTILLATION COUNTER, PROPORTIONAL COUNTER, PULSE HEIGHT ANALYZER, COUNTING CIRCUIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1245

STEP NO--UR/0120/70/001/000/0112/0115

CIRC ACCESSION NO--AP0115262

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 027

CIRC ACCESSION NO--AP0115262 UNCLASSIFIED PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRINCIPAL SCHEME IS GIVEN OF AN ELECTRONIC DEVICE WHICH FORMS THE FUNCTION F IS SIMILAR TO LOG 1.5((E PLUS E SUBO PLUS K(DELTAE-DELTAX)) DELTAE-DELTAX) WHERE E IS THE RESIDUAL ENERGY OF THE PARTICLE AFTER ITS PASSAGE THROUGH THE DETECTOR WITH A THICKNESS DELTAE-DELTAX, AND E SUBO AND K ARE VARYING CONTS. THE ENERGY PROFILE OF FUNCTION F WAS DETED. FOR ALPHA PARTICLES IN THE RANGE 5-24 MEV AND FOR P AT 1-14.7 MEV. THE PARTICLES WERE REGISTERED BY A TELESCOPE OF 2 PROPORTIONAL AND 1 SCINTILLATION COUNTERS. THE USE OF THE TELESCOPE IN CONJENCTION WITH THE ELECTRONIC DEVICE ALLOWS DISCRIMINATION OF ALPHA PARTICLES FROM THE NOISE OF OTHER CHARGED PARTICLES.

FACILITY: FIZ. TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

SELEZNEVA, T. V.; TUTUBALIN, V. N.

"Evaluation of Statistical Characteristics of Long Waveguides in a Two-Wave Model"

Moscow, Teoriya Veroyatnostey i Yeye Primeneniya; January-March, 1973; pp 94-108

ABSTRACT: The product of random independent matrices (of the second order) is considered as an exact model of a long waveguide with two propagating waves: the basic wave and a parasitic wave. Two approximation methods for evaluating the statistical characteristics of such models are given: a diffusion approximation and a type of central limit theorem. The accuracy of these approximations is investigated by a Monte Carlo simulation. The Monte Carlo experiments are found to be not statistically stable, but a certain agreement exists between the results of these experiments and the approximation methods given in the article.

There are seven bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTUBALIN, V. N.

UDC: 519.2

"Probability Theory. A Short Course and Scientific Procedural Notes"

Moscow, Teoriya veroyatnostey. Krat,. kurs i nauch.-metod. zamechaniya (see English above), Moscow University, 1972, 230 pp, ill. 61 k. (from RZh-Kibernetika, No 5, May 73, abstract No 5V142K by B. Rogozin)

Translation: Let us list the section headings contained in the first half of the text: 1. The Discrete Space of Elementary Events, 2. Conditional Probability, Independence, Basic Formulas, 3. Random Quantities and Their Fundamental Characteristics, 4. Chebyshev Inequality. Law of Large Numbers. Bernoulli Tests. The Poisson Theorem, 5. Statistical Verification of Hypotheses, 6. Kolmogorov Axiomatics. Lebesgue Integral, 7. Distribution of Random Quantities, 8. The Central Limit Theorem, 9. Applications of the Central Limit Theorem, 10. Sampling. Estimating Parameters, 11. General Linear Model

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTUBALIN, V. N., Teoriya veroyatnostey. Krat. kurs i nauch.-metod. zamechaniya, Moscow, 1972, 230 pp

Related to Normal Distribution of Observation Errors, 12. Further Application of the Method of Least Squares. The second half of the text is made up of notes on the first part which are of a procedural nature for sections 1-7, while those for sections 8-12 contain supplementary material for these sections as well. The text is compiled on the basis of lecture courses given by the author to students who have completed elementary courses in the mathematics and mechanics faculty of the university in a study program which contains a relatively short course on probability theory and mathematical statistics, and also to adult students in supplementary education classes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTUBALIN, V. N.

UDC: None

"Dynamic Systems With Random Perturbations"

Moscow, Teoriya Veroyatnostey i Yeye Primeneniya, v. 4, No 18, 1973, pp 718-733

Abstract: The subject of this paper is the use of Markov processes of the diffusion type for investigating dynamic systems with random perturbations. The author investigates the case in which the perturbations are small with some finite correlation time, the velocity of the unperturbed motion being high. The unperturbed system is considered in the form of the system of differential equations:

$$\frac{dx(t)}{dt} = f(t,x(t)),$$

where x(t) is the trajectory of the system. A model of the form

$$\frac{dx(t)}{dt} = g(t,x(t), \xi(t)),$$

where $\xi(t)$ is the random process, is considered. This process is unconnected with past values of the trajectory and is assumed to be small; the sequence of observations is taken similar to a Markov chain.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUTUBALIN, V. N.

"Multimode Waveguides and Probability Distributions on a Symplectic Group"

Moscow, Teoriya Veroyatnostey i yeye Primeneniya, Vol 16, No 4, Oct-Dec 71, pp 649-659

Abstract: The article is a continuation of the author's work on finding families of probability distributions as a basis for computer modeling of waveguide communications lines (see Tutubalin, V. N., "Investigation of Some Mathematical Models of Radio Waveguides With Random Nonhomogeneities", *Teoriya veroyat. i yeye primen.*, Vol 14, No 4, 1969). In this paper, the author considers multiple-mode waveguides with losses. Asymptotic expressions are found for transmitted and reflected waves in a long waveguide in terms of the statistical characteristics of a short section. Solution of this problem is of particular interest inasmuch as it quite naturally gives rise to probability distributions on a symplectic group (a so-called

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 537.311.33:546.28/289

AFANAS'YEV, V.N., STEPOVIK, A.P., TUTUROV, YU.F., FILIMONCHEVA, P.I.

"Measurement Of The Lifetime Of Carriers In Germanium And Silicon During Neutron Irradiation"

Fiz. i tekhn. poluprovodnikov (Physics And Technology Of Semiconductors), 1971, 5, No 6, pp 1067-1073 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B19)

Translation: It is experimentally established that the radiative constant in Ge and Si during neutron irradiation with an energy of 14 Mev is decreased with a reduction of temperature. 6 ref. Summary.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015

USSR

TUTUBALIN, V. N., Teoriya Verovatnostey i yeye Primeneniya, Vol 16, No 4, Oct-Dec 71, pp 649-659

group of complex matrices retaining a certain skew-symmetric form). An analog of the central limit theorem is used for studying the products of symplectic matrices: i. e., transmission matrices for multimode waveguides with random nonhomogeneities. The normal distributions proposed in this paper (with the usual corrections for asymmetry and excess) should be adequate for computer modeling of waveguide communications lines. Bibliography of twelve titles.

2/2

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 681.3

TUTYATIN, V. G., KAKHKHAROV, T. K.

"The Algebra of States and Events. Applications to Technical Problems"

Sistemotekhnika. Vyp. 3 [Systems Engineering, No 3 -- Collection of Works], Kiev, 1970, pp 57-71, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V576 by O. Belkin).

Translation: The possibility is noted of using the algebra of states and events both for synthesis of discrete logic systems, and for continuous systems. In the latter case, the moment of arrival of conditions must be taken as the moments at which equilibrium is established. Selection of the equilibrium state each time is unambiguously determined by the state in which the system was located at the moment of disruption of equilibrium. This work makes an attempt to synthesis a logic circuit for a distributor, providing for nonlinear control.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EXTENSIVE IDIOPATHIC MUCINOUS ALOPECIA -U-

AUTHOR-(02)-RAZNATOVKSIY, I.M., TUTYKHIN, A.B.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 3, PP 68-71

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN DISEASE, THYROID GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1477 STEP NO--UR/0206/70/000/003/0068/0071

CIRC ACCESSION NO--AP0101563

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101563

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO PATIENTS WITH EXTENSIVE MUCINOUS ALOPECIA WERE OBSERVED WHICH THE AUTHORS BELIEVED TO BELONG TO MYXODERMIAS RUNNING A COURSE WITHOUT SIGNS OF DISORDERS ON THE PART OF THE THYROID. IT IS SUGGESTED THAT THE CLINICAL FORM BE NAMED BY THE TERM GIVEN BY PINCUS, AND THAT HISTOLOGICAL CHANGES SIMILAR TO THOSE FOUND IN IT BE DESIGNATED BY THE TERM "MUCOPHANEROSIS" SUGGESTED BY BRAUN FALCO.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 539.374

TUTYSHKIN, N. D.

"Prandtl Theorem for a Fast Plane Flow"

V sb. Tekhnol. mashinostroyeniya. Vyp. 22 (Technology of Machine Building. No. 22 -- Collection of Works), Tula, 1972, pp 151-154 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V497)

Translation: It is established that the second Hencky theorem does not hold for the dynamic problem of a plane deformation of an ideally plastic medium. More general relationships are obtained on the basis of purely geometrical considerations which lead to the formulation of the second theorem under the condition that the angle between similar glide lines is constant (the first Hencky theorem). The obvious proposition is then made that the first theorem is invalid for the dynamic problem. G. A. Geniyev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

ANZON, Z. V., et al, Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR, Alma-Ata; BOZOKI, G., et al, Central Research Institute of Physics, Budapest; DALKHAZHAV, N., et al, High-Energy Laboratory, Joint Institute of Nuclear Research, Dubna; BABETSKIY, Ya., et al, Laboratory of High-Energy Physics, Institute of Nuclear Research, Polish Academy of Sciences, Krakow; MASLENNIKOVA, N. V., TRET'YAKOVA, M. I., CHERNYAVSKIY, M. M., Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR, Moscow; ALEKSEYEVA, K. I., Scientific Research Institute of Nuclear Physics, Moscow State University, Moscow; CHERNEV, Kh., TODOROV, P. T., Institute of Nuclear Physics, Academy of Sciences of the People's Republic of Bulgaria, Sofia; TUVDENDORZH, D., SHARKHI, D., CHADRAA, V., Institute of Physics and Mathematics of the Academy of Sciences, Mongol People's Republic, Ulan-Bator); AZIMOV, S. A., et al, Institute of Nuclear Physics Academy of Sciences, Uzbek SSR, Tashkent

"Coherent Generation of Particles by π^--Mesons With Momenta of 45 and 60 Gigaelectron-Volts/Sec on the Basis of Photoemulsion Nuclei"

Moscow, Izvestiya Akademii Nauk SSR. Seriya Fizicheskaya, No 9, 1970, pp 1938-1943

Abstract: In the present report are presented data concerning the coherent generation of π-mesons by π^--mesons at 45 and 60 gigaelectron-volts/sec, obtained by means of nuclear photoemulsion by the laboratories of a number of institutes

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

ANZON, Z. V., ET AL, Izvestiya Akademii Nauk SSR. Seriya Fizicheskaya, No 9, 1970, pp 1938-1943

of the Soviet Union and countries of the Soviet bloc. The joint study was organized by the Photoemulsion Committee of the Joint Institute of Nuclear Research. The preliminary results of this project were presented at the International Conference on Elementary Particles in Lund in June 1969 and at the International Conference on Cosmic Rays in Budapest in August 1969. The path value of the coherent generation of three and five charged particles is obtained from the distribution of charged particles and the angular characteristics of secondary particles on the basis of multiplicity. Comparison of the path value with the corresponding values at lower and higher energies shows a decrease of the run (and, consequently, an increase of the coherent particle-generation cross section) as the energy increases. 5 figures, 11 bibliographic entries.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR UDC 669.15:194.66.046

TUYAKHOV, V. N., SOKOLOV, K. N., LEONT'YEV, B. A., and FAYNBERG, V. B. (deceased)

"Effect of Annealing System on the Structure and Properties of 08kp Steel"

Metallurgicheskaya i Gornorudnaya Promyshlennost', No 2, 1971, pp 29-30

Abstract: The effect of the heating rate and annealing temperature on the properties of 08kp steel were studied. The heating rate had little effect on the structure and mechanical properties of the steel. Optimum annealing temperature was 700°C; at temperatures above 725°C, strength characteristics improved, but perlite structures appeared and an increase in the difference in grain size was noted. A maximum change in structure and mechanical properties was observed during the first three hours of exposure to 700°C. Increased cooling velocities after annealing increased the stability characteristics, but had no substantial effect on the size of the ferrite granules and the separation character of the structurally free iron carbide.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

UDC 620.183:677.4

USSR

TUYCHIYEV, Sh., SULTANOV, N., GINZBURG, B. M., and FRENKEL', S. Ya., Institute of High-Molecular Compounds, Academy of Sciences of the USSR

"Effect Which Drawing has on the Supermolecular Structure of Polymer Fibers"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 12, Series A, No 9, Sep 70, pp 2,025-2,035

Abstract: Wide-angle and narrow-angle x-ray diffraction methods are used to study polyvinyl alcohol fibers with various degrees of hot drawing. X-ray studies were also done on iodine-contrasted specimens. It is shown that for a simple two-phase model of the supermolecular structure of oriented fibers, the size of amorphous sections increases with the degree of hot-drawing, reaching 86-92% of the crystallite density for "dry" polyvinyl alcohol fibers. As the degree of drawing increases, there is a slight reduction in the crystallite density (by approximately 1%), and the lattice type goes from monoclinic toward orthorhomic. A scheme is proposed for the rearrangements in the supermolecular structure of polyvinyl alcohol fibers with an increase in the degree of hot-drawing. According to this scheme, as the degree of hot-drawing increases there is a rise in the number of continuous chains and a reduction in

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUYCHIYEV, Sh., et al, Vysokomolekulyarnyye Soyedineniya, Vol 12, Series A, No 9, Sep 70, pp 2,025-2,035

the number of folded chains. At the same time, there is somewhat of a reduction in the transverse dimensions of fibrils due to a reduction in the number of blocks in the "mosaic" in the fibril crystallites, accompanied by an increase of shear fractures in the fibril packing. Drawing increases the density of both intrafibrillar and interfibrillar amorphous layers. On the whole, the structure of the fibers becomes more uniform. The authors thank D. Ya. TSVANKIN, A. I. SLUTSKER, Yu. V. BRESTKIN and S. L. DOBRETSOV for discussing the results and for useful criticism, and also A. G. POVESHCHENKO for constant interest in the work.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTENSIFICATION OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER SOLUTIONS -U-

AUTHOR-(04)-TUYCHYEV, I.S., RIZAYEV, N.U., YUSIPOV, M.M., INAGAMOV, A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 74-7

DATE PUBLISHED-------70

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

TOPIC TAGS--WATER PURIFICATION, ION EXCHANGE, GLYCERINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0424 STEP NO--UR/0322/70/000/001/0074/0077

CIRC ACCESSION NO--AT0114704

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0114704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER SOLNS. IN THE PSEUDOLIQUEFACTION LAYER OF THE IONITE WAS INVESTIGATED. THE SOLNS. USED HAD A GLYCERIN CONTENT OF 11PERCENT. CA PRIME POSITIVE POSITIVE AND MG PRIME POSITIVE POSITIVE IONS AT 0.98 MG-EQUIV-L., FREE FATTY AND MINERAL ACIDS AT 3.28 MG-EQUIV-L. THE SORPTION PROCESS WAS INVESTIGATED IN BOTH CYLINDRICAL AND CONICAL COLUMNS. RESULTS SHOWED THE CONICAL ONES WITH SMALL ANGLE OF CONICITY TO BE THE MOST EFFICIENT. FACILITY: TASHKENT. POLITEKH. INST., TASHKENT, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

UDC: 621.373:530.145.6:621.317.17

USSR

MALYUKOV, B. A., KOROLEV, V. Ye., Tuyev, G. V.

"Determining the Thickness of Mirror Coatings in a Semiconductor Laser by the Kissig Method"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr. kachestvom i standartiz. (Electronic Technology. Scientific and Technical Collection. Quality Control and Standardization), 1970, vyp. 4, pp 71-74 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D342)

Translation: For determining the thickness of mirror coatings, the Kissig method has a number of advantages: it is an absolute method of thickness measurement and does not require standards; it gives high precision; it does not destroy the specimen. A curve is given for reflection from a rhodium film 525 Å thick. All measurements of thicknesses of rhodium films and neodymium oxide films were done with the use of "copper" emission. The reproducibility of the described method was evaluated by measuring the thickness with respect to the maxima and minima of three curves for reflection from the same film. The Kissig method can be used to evaluate the nonuniformity of a coating. The accuracy of determining film thickness is high. Localization of the method is ~3 mm. However, the method is slow.

A. K.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

UDC 621.396.666(088.8)

USSR

LOYTER, P. N., TUYEV, L. T.

"Cascade Amplifier with Automatic Gain Control"

USSR Author's Certificate No 254581, Filed 3 June 68, Published 9 Mar 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D135P)

Translation: This author's certificate introduces a cascade amplifier with automatic gain control containing cascades with regulatable transistors, an automatic gain control detector, a low-frequency filter, and a DC amplifier. The amplifier is distinguished by the fact that in order to improve the operating stability at low frequencies and to increase the reliability, an additional transistor is connected parallel to the transistors of the indicated cascade amplifier. The base of this auxiliary transistor is connected to the output of the DC amplifier via a phase inverter.

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Acc. Nr.: AP0044049

Ref. Code: UR0387
JPRS 50052

Nature of the East Kurile Magnetic Anomaly

(Abstract: "Nature of the East Kurile Magnetic Anomaly," by I. K. Tuyezov, M. L. Krasnyy, O. A. Solov'yev and Ye. V. Kochergin, Sakhalin Multi-Discipline Scientific Research Institute; Moscow, Izvestiya Akademii Nauk SSSR, Fizika Zemli, No. 1, 1970, pp. 90-93)

The east Kurile regional anomaly stands out clearly in the regional field obtained by analytical continuation of the anomalies of the Okhotsk-Kurile region into the upper half-space at the levels 12.5, 25 and 40 km. This anaomaly extends for more than 1,500 km along the Kurile-Kamchatkan island arc and for a distance of 50-100 km to the east of it. Its axis is situated between the island arc and the abyssal trench. The northern part of the observed anomaly is about 300 km wide at an altitude of 12.5 km; in the south it is about 150 km wide. On the west it joins the anomalies of the Sea of Okhotsk and on the east it adjoins the sign-variable field of the Pacific Ocean. A comparison of the map of regional magnetic anomalies with seismic deep seismic sounding cross sections shows a rather good correlation between the intensity of the regional magnetic anomaly and the thickness of the basalt layer. In the Kurile-Kamchatkan island

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arc the thickness of the granite layer is generally insignificant and therefore it is entirely natural to assume that the regional magnetic anomaly is caused by the behavior of the upper and lower boundaries of the basalt layer. Computations were made for determining the quantitative relationships between deep seismic sounding cross sections and magnetic anomalies scaled to an altitude of 25 km. The computations revealed a good agreement between the computed T values from the basalt layer and the regional anomaly. The computations prove that the regional east Kurile magnetic anomaly is caused for the most part by the magnetic properties, thickness and depth of the basalt layer.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--SEISMIC SECTIONS OF THE EARTH'S CRUST OF NORTH WEST PART OF PACIFIC MOBILE BELT -U-

AUTHOR--TUYEZOV, I.K.

COUNTRY OF INFO--USSR, JAPAN

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 100-104

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--EARTH CRUST, SEISMIC SOUNDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0862 STEP NO--UR/0210/70/000/003/0100/0104

CIRC ACCESSION NO--AP0110583

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3"

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CIRC ACCESSION NO--AP0110583 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VELOCITY COLUMNS OF THE REGIONS ARE DIVIDED INTO FOUR TYPES: CONTINENTAL, SUBCONTINENTAL, OCEANIC SUBOCEANIC. THEIR SIMILARITY AND DIVERSITY ARE SHOWN. THE EARTH'S CRUST OF JAPAN IS CONSIDERED AS TRANSITIONAL MEMBER BETWEEN TWO FIRST TYPES. BASED UPON THE ANALYSIS OF VELOCITY COLUMNA THE CONCLUSIONS ARE DRAWN ON THE EARTH'S CRUST EVOLUTION OF DURIL ISLANDS AND JAPAN.

FACILITY: SAKHKNII SO AN SSSR, G. NOVOALEKSANDROVSK.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

RUHLEV, YU. V.; TUZ, V. T.; VOSTROV, G. N.

"A Method of Automatic Document Indexing with Introduction of Links between the Elements of the Search Pattern"

Moscow, Nauchno-Tekhnicheskaya Informatsiya -- Seriya 2: Informatsionnyye Protsessy i Sistemy; October, 1973; pp 30-3

Abstract: An algorithm for constructing a document's search pattern that inserts links between its terms is proposed. The algorithm is represented by a flow chart showing the following operations: Words likely to be informative are isolated from the text (these are words that are frequently encountered in the text, elements of the title, words occurring in sentences opening with such phrases as "therefore", "it follows from the above", etc.). The words are ranked by the method of correlation clusters according to decreasing infromability. The first n terms of the series are included in the search pattern.

In order to establish the links, the text is broken into segments. A list of segments containing the words from the set of n chosen ones is compiled. The segments are subjected to syntactic analysis.

Terms have been ranked by decreasing informability on the Minsk-22 computer.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

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RUBLEV, YU. V. et al., Nauchno-Tekhnicheskaya Informatsiya -- Seriya 2: Informatsionnyye Protsessy i Sistemy; October, 1973; pp 30-3

A manual experiment in constructing the search pattern and inserting the links between the terms has been conducted.

The article includes two figures. There are six references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 621.317.725

TUZ, YU. M., TSIDELKO, V. D., NIKIFOROVA, G. A., SERPILIN, K. L., GAPCHENKO, L.M., and SINITSKIY, O. P.

"A Digital Phase-Sensitive Voltmeter"

V sb. Tsifr. vychisl. mashiny (Digital Computing Machinery--collection of works), Kiev, 1972, pp 109 - 118 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A369)

Translation: The article contains a description of a digital phase-sensitive voltmeter in which signals are converted in a single-channel circuit. A block diagram of the instrument and a description of its operation are given. The advantages of a phase rotator based on a single-channel circuit are noted. A logometric voltage-frequency converter is used in the instrument to reduce errors due to the effect of the base voltage. The technical characteristics of a model of the digital phase-sensitive voltmeter made at the Department of Measurement Technology of Kiev Polytechnical Institute are given. One illustration, seven bibliographic citations.

Abstract by O.M.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 621.314.61(088.8)

GAPCHENKO, L. M., TUZ, Yu. M., SERPILIN, K. L., and GUBAR', V. I. [Kiyev. politekhn. in-t ~~Kiev Polytechnical~~ Institute]

"Device for Conversion of A-C Voltage into D-C"

USSR Author's Certificate No 269295, filed 25 Nov 68, published 16 July 70 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B462P)

Translation: A device is patented for conversion of a-c voltage into d-c. The device contains a wide-band a-c amplifier, a precision attenuator, a commutator, a detector, an error signal amplifier, a synchronous commutator, and a control voltage generator. With the object of increasing the speed of response and decreasing the frequency of error, the device is provided with a supplementary detector, a supplementary wide-band amplifier, and two memory devices, during which the output of the additional detector is connected opposite to the output of the principal detector, the output of the memory devices is connected to the input of the control circuit of the principal and supplementary amplifiers, and the input of the memory 15 devices is connected to the output terminals of the synchronous commutator. 1 ill.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PREPARATION AND PROPERTIES OF FIBERS FROM THE LACTAM OF 4 AMINOCYCLOHEXANECARBOXYLIC ACID -U-

AUTHOR-(05)-VOLOKHINA, A.V., MURASHKINA, S.I., KHARITONOVA, A.S., TUZHIKOVA, S.S., ROLEV, M.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 67-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMERIZATION, LACTAM, CAPROLACTAM, SULFURIC ACID, SYNTHETIC FIBER, ELONGATION, NYLON, AMINE, CYCLOHEXANE, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0831 STEP NO--UR/0183/70/000/002/0067/0068

CIRC ACCESSION NO--AP0124498

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2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMN. OF THE TITLE LACTAM (I) (PREPD. BY HEATING CIS 4 AMINOCYCLOHEXANECARBOXYLIC ACID AT 300DEGREES IN AN AUTOCLAVE) WITH EPSILON CAPROLACTAM (II) WAS DONE AT 185-240DEGREES DEPENDING ON THE I-II RATION IN THE PRESENCE OF K METAL AND II N ACETYL DERIV. THE POLYMER MELTS CANNOT BE SPUN INTO FIBERS, BUT 10-12PERCENT SOLNS. IN H SUB2 SO SUB4 WERE SPUN INTO WATER, GIVING EXCELLENT FILAMENTS. THE OPTIMUM MONOMER RATIO WAS 1:1, THE TEMP. 185DEGREES. THE FIBERS PREPD. UNDER THE OPTIMUM CONDITIONS HAD 589 KG-MM PRIME2 MODULUS AT 3PERCENT ELONGATION AND RESISTED 41,080 FLEX CYCLES UNDER 5 KG-MM PRIME2 LOADING IN BOTH CASES, EXCEEDING THESE PROPERTIES OF NYLON 6.

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USSR UDC 517.9:535.4

MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A. (Moscow)

"Diffraction of Plane Sound Wave by a Thin Semi-infinite Elastic Plate"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

Abstract: The formulation of the problem of the diffraction of a plane sound wave by a thin, semi-infinite elastic plate and an approach to its solution were first given by G. D. MALYUZHINETS at the Fourth All-Union Acoustic Conference in 1958 in Moscow. This paper will soon appear in Trudy Akusticheskogo Instituta (Transactions of the Acoustic Institute). However, this problem was not completely solved for the following reasons: (1) the lack of a sufficiently complete theory on MALYUZHINETS functional equations; (2) no methods had been devised for the analysis of diffraction fields corresponding to the solutions of these functional equations; (3) the lack of a detailed analysis of the behavior of the Brewster angles corresponding to the thin elastic plate. Recently a fairly complete theory of MALYUZHINETS func-

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

tional equations was developed by A. A. TUZHILIN and methods devised for the analysis of diffraction fields in an angular region. These studies made it possible to obtain a solution to the title problem and to make a detailed analysis thereof. The present article sets forth these results.

The problem is to obtain a solution to the Helmholtz equation

$$(\Delta + k^2)P(x, y) = 0$$

in the (x, y) plane. The problem is reduced to two problems by

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

Express the composite field P(x,y) as the sum of two addends: viz., odd and even parts. The two problems are:

1. In the half-space $x > 0$ to seek a solution to the Helmholtz equation

$$(\Delta + k^2)P_+(r, \varphi) = 0,$$

and 2. In the half-space $x > 0$ to seek a solution to the Helmholtz equation

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

$$(\Delta + k^2)P_-(r, \varphi) = 0.$$

The solutions to these problems (i. e., fields $P \pm (r, \varphi)$) are sought in the form of Sommerfeld-MALYUZHINETS integrals, as a result of which nonhomogeneous MALYUZHINETS functional equations are obtained. General solutions are obtained for the resultant functional equations, and from these are determined the solutions which correspond to the required diffraction fields.

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Acc. Nr.: AP0029815

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 69-71

STATE OF THE PANCREAS IN LIVER CIRRHOSIS

Z. A. Bondar, S. A. Tuzhilin, V. M. Makhov, N. D. Belousova and A. I. Saluenua (Moscow)

In 80 patients with liver cirrhosis examinations revealed a reduction of the pancreatic secretory function during secretin and pancreasimine stimulation. A study with labeled lipids revealed steatorrhoea. During the active phase of liver cirrhosis exacerbation of the pancreatic process was found. Examination of 29 autopsy cases of liver cirrhosis showed in all instances different changes in the pancreas — from periductular and inter- and interalobular fibrosis to phenomena of necrosis and even hemorrhages in the parenchyma of the gland and adipose tissue.

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USSR

UDC 669.018.24.669.018.8.669.977

TUZNIKOV, A. F.

"Antifriction Properties of Various Materials During Friction in Liquid and Gaseous Sodium at High Temperatures"

Metallovedeniye[Metal Science -- Collection of Works], No. 14, Leningrad, Sudostroyeniye Press, 1970, pp 254-262. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I712 by the author).

Translation: Data from the literature are used to analyze the behavior of various materials and coatings during friction in liquid and gaseous sodium at high temperatures. A significant role in the provision of boundary lubrication during friction in high temperature is played by chemosorbed films of the double oxide, formed when the Mo, Cr, and W components of the alloys react with Na. The possibility is shown of using a number of corrosion-resistant materials as friction couple materials in liquid Na and its vapors at temperatures up to 650°. 4 figs; 1 table; 18 biblio refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUZOV, G. I. UDC: 621.396.621.33

"Noise Immunity of Conditionally Optimal Reception of Pseudo-Random Signals"

Kiev, Izvestiya VUZ USSR--Radioelektronika, No 10, 1972, pp 1228-1237

Abstract: This theoretical paper defines the conditionally optimal receiver as an instrument providing optimal reception, according to the criterion of an ideal observer, which would transform to a receiver realizing potential noise immunity with exact formation of the original signal. By investigating such a receiver, the actual noise immunity of a communications system can be calculated with the effect of various destabilizing factors taken into account. In this theoretical article, the noise stability of the receiver of pseudo-random signals and signals of inverse modulation is computed, and generalizations of other forms of modulation are formed. The most widely used forms of pseudo-random signal modulation are chosen for investigation. Conditions are derived under which the certainty of conditionally optimal reception coincides with the certainty of optimal reception, and curves characterizing the reliability of conditionally optimal reception in the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUZOV, G. I., Izvestiya VUZ USSR--Radioelektronika, No 10, 1972, pp 1228-1237

presence of statistical errors are plotted. A discussion of the effect of errors in synchronization on the reliability of reception of delay and inverse modulation is also given.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC 621.391.2

TUZOV, G. I., SNIRIN, V. V., KOTOV, V. A.

"Dynamics of a Filtration System for a Pseudorandom Signal with an Arbitrary Manipulation Angle"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 295-300.

Abstract: A study was made of the nonlinear dynamics of a tracking receiver which is optimal for a pseudorandom phase-manipulated signal with an arbitrary manipulation angle described by a system of second order nonlinear dependent differential equations. Using the method of numerical integration of the differential equations, the dynamics of the system and the lock-on band of one of the subsystems of the tracking receiver -- the automatic frequency control circuit -- were determined as functions of the system parameters and initial conditions: the initial phase, the initial delay, the values of the amplification coefficients of the subsystem and the manipulation angle. All these parameters must be considered during initial synchronization of the tracking receiver.

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USSR

UDC 621.372.852.15(088.8)

TUZOV, G.I., TALALAY, M.A.

"Tracking Filter For Processing Of A Pulse Phase Manipulated Pseudorandom Signal"

USSR Author's Certificate No 305527, filed 5 Nov 69, published 4 Aug 71 (from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2D55P)

Translation: A tracking filter is proposed, which includes: 1) A system of phase automatic frequency control, consisting of a series-connected frequency converter, the IF amplifier of a phase detector, the control input of which is connected across a modulator with the output of a reference generator, a low-frequency filter with two inputs, a reactance tube, a controlled oscillator and a phase shifter, the input of which is connected with the output of the reference generator; 2) A delay tracking circuit containing a series-connected phase detector, the input of which is connected with the output of the phase shifter and the IF amplifier of the system of automatic frequency control, a multiplier, summator, a low-frequency filter with two inputs, a controlled timing oscillator,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUZOV, G. I. et al, USSR Author's Certificate No 305557

a shift register, the output of which is connected with the modulator and the multiplier, and a decoder. In order to increase noise immunity during realization of optimum gating of the receiver at the time of arrival of the pulse signal, the output of the controlled timing oscillator is connected with an impulse counter which is connected across a trigger with the control inputs of the switches [klyuch], one of which is connected to the output of the frequency converter of the phase automatic frequency control, and the other between the controlled timing oscillator and the shift register of the delay tracking circuit, and with the control inputs of the low-frequency filter.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

TUZOV, G. I. UDC: 621.396.621.5(088.8)

"A Tracking Filter With Cross Demodulation and Programmed Control"

USSR Author's Certificate No 259972, filed 21 Apr 65, published 27 Apr 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D51 P)

Translation: This Author's Certificate introduces a tracking filter with cross demodulation and programmed control for processing a phase-modulated signal with variable frequency and time delay. The filter consists of a phase AFC system and a digital discriminator with delayed synchronization. To isolate information from the received signal on the speed of the target and its range, the next to the last branch of the shift register in the digital discriminator is connected to the modulator of the reference oscillator in the phase AFC system; the output of this oscillator is connected through a 90° phase shifter to one of the inputs of a phase detector which controls the digital discriminator; the second input of the phase detector is connected to the input of a phase detector in the phase AFC system. To improve the interference stability of the tracking filter by introducing programmed control, the low-frequency filter output from the phase AFC system is connected through a linear converter and an amplifier to the cadence frequency control element of the digital discriminator. N. S.

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Circuit Theory

USSR

UDC 621.396.621.33

TUZOV, G. I., SPIRIN, V. V., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Nonlinear Dynamics of a System of Filtration of a Pseudorandom Signal With Phase Keying"

Moscow, Radiotekhnika, Vol 26, No 7, Jul 71, pp 79-82

Abstract: A method of numerical integration is used to determine the locking band of the phase AFC subsystem in a tracking receiver as a function of the parameters of the system and the initial conditions. Classical determination of the lock-in band which characterizes the region of initial misalignments where a holding mode is maintained under any initial conditions does not completely meet the specific requirements of the given system. In this system, there are regions of initial frequency misalignments where signal lock-in may or may not take place, depending on the initial delay and phase. The amplification factor of the delay-tracking system affects the lock-in band and transient processes in the phase AFC tank circuit. Conditions are determined for increasing the lock-in band and shortening the time of establishing synchronous operation in the system for practically any initial delay and

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USSR

TUZOV, G. I., SPIRIN, V. V., Radiotekhnika, Vol 26, No 7, Jul 71, pp 79-82

phase. In the phase AFC subsystem, the lock-in band, as well as the nature and time of the transient process are considerably dependent on the true phase and on the initial mismatch with respect to true delay. The extent of the lock-in band and the dynamics of the system are independent of the sign of the initial mismatch in delay.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410015-3

USSR

UDC: 621.372.852.15

TUZOV, G. I., TALALAY, M. A.

"A Tracking Filter for Processing a Pseudorandom Phase-Keyed Pulse Signal"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 18, Jun 71, Author's Certificate No 305557, Division H, filed 5 Nov 69, published 4 Jun 71, pp 186-187

Translation: This Author's Certificate introduces a tracking filter for processing a pseudorandom phase-keyed pulse signal. The filter incorporates a phase AFC system made up of a mixer, i-f amplifier, phase detector, low frequency filter with two inputs, reactive tube, controllable oscillator and phase shifter all connected in series. The controlling input of the phase detector is connected through a modulator to the output of a reference oscillator, and the input of the phase shifter is connected directly to the output of the reference oscillator. The tracking filter also includes a delay tracking circuit which contains a phase detector, multipliers, an adder, a low frequency filter with two inputs, a controllable cadence oscillator, shift register and decoder all connected in series. The inputs of the phase detector are connected to the outputs of the phase shifter and

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TUZOV, G. I., TALALAY, M. A., USSR Author's Certificate No 305557

the i-f amplifier in the phase AFC system, and the outputs of the shift register are connected to the modulator and to the multipliers. As a distinguishing feature of the patent, resistance to interference is improved while implementing optimum gating of the receiver for the time of arrival of the pulse signal by connecting the output of the controlled cadence generator to a pulse counter which is connected through a flip-flop to the controlling inputs of switches. One of the switches is connected across the input of the phase AFC mixer, and the other is connected between the controllable cadence oscillator and the shift register of the delay tracking circuit, and to the controlling inputs of the low frequency filter.

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