"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

REEL # 34

TSIPEROVICH, O.S.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED

1/2 031 PROCESSING DATE--23OCT70

TITLE--SUPPRESSION OF THE SPIRAL INSTABILITY OF S SEMICONDUCTOR PLASMA IN STRONG MAGNETIC FIELDS -U-

AUTHOR-(02)-TSIPIVKA, YU.I., KARAVAYEV, G.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 508-11

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--STRONG MAGNETIC FIELD, PLASMA INSTABILITY, SEMICONDUCTOR PLASMA, ELECTRIC FIELD, GERMANIUM SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0449/70/004/003/0508/0511

PROXY REEL/FRAME--1988/0106

CIRC ACCESSION NO--AP0105192

UNCLASSIFIED

/2001 CIA-RDP86-00513R002203410001-

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 031

CIRC ACCESSION NO--AP0105192

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS FOR THE ONSET OF THE SPIRAL INSTABILITY OF A SEMICONDUCTOR PLASMA IN A STRONG MAGNETIC FIELD IS DISCUSSED, ASSUMING FINITE SAMPLE DIMENSIONS, WHICH IMPOSE CERTAIN LIMITATIONS ON VALUES OF THE WAVE VECTOR, X. IN THIS CASE THERE EXIST, FOR A GIVEN ELEC. FIELD, 2 VALUES OF THE MAGNETIC FIELD LIMITING AN INTERVAL IN WHICH THE SPIRAL INSTABILITY TAKES PLACE. A THRESHOLD ELEC. FIELD, E SUBTH, EXISTS, BELOW WHICH THE SPIRAL INSTABILITY SHOULD NOT BE OBSED. AT ANY MAGNETIC FIELD. THE E SUBTH INCREASES WITH INCREASING X AND WITH DECREASING DEGREE OF INJECTION, DELTA. EXPTL. RESULTS OBTAINED WITH N-GE (ELECTRON AND HOLE MOBILITIES 2100 AND 1500 CM PRIME2-V-SEC, RESP., AT 300DEGREESK) AT SIMILAR TO 20 KG AND DELTA SIMILAR TO 0.3 AGREE REASONABLY WITH THEORETICAL CONCLUSIONS.

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CIRC ACCESS

UDC 537.311.33

USSR

BILENKO, D. I., LUN'KOV, A. Ye., ORNATSKAYA, Ye. M., and TSIPORUKHA, V. D.

"Interaction of Millimeter and Submillimeter Radiation with Semiconductor Materials"

Tr. NII Introskopii (Works of the Scientific-Research Institute for Introscopes), 1970, Issue 4, pp 61-62 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstr-ct No 9B27)

Translation: A calculation is made of the reflection coefficient of the electromagnetic radiation from nondegenerate semiconductor materials for various scattering mechanisms of charge carriers. The results of the calculation show the correctness of a description of the properties of materials in the millimeter and submillimeter bands based on simplified semiclassical relations for a complex dielectric constant. Summary.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 033

TITLE--RELAXATION SPECTRA OF FILLED POLYETHYLENE MELTS -U-

AUTHOR--TSIPRIN, M.G.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 85-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYETHYLENE, CALCIUM COMPOUND, FILLER, RELAXATION PROCESS, SPECTRUM, POLYMER, PLASTIC DEFORMATION, CALCIUM CARBONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0197/70/000/002/0085/0089

PROXY REEL/FRAME--1997/0682

CIRC ACCESSION NO--AP0119590 UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 033

CIRC ACCESSION NO--AP0119590

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BOLTZMANN PRINCIPLE WAS APPLIED TO THE RELAXATION PROCESSES OF THE MELTS OF LOW D. POLYETHYLENE (I) AND LOW D. I FILLED WITH 20-30PERCENT CASIO SUB3 OR CACO SUB3. FILLING DISPLACED THE MAX. OF RELAXATION PROCESSES IN THE REGION OF LOW RELAXATION FREQUENCY. A PARTITION FUNCTION WAS CALCD. FOR THE STRENGTH OF RELAXATION OF BONDS OF THE LOW D. I MELT. FILLING WITH CACO SUB3 INCREASED THE BOND STRENGTH IN THE REGION OF THE MAX. OF THE RELAXATION SPECTRA FREQUENCY. FILLING WITH CASIO SUB3 LOWERED THE DEFORMATIVE STRENGTH OF THE MELT. FACILITY: INST. MEKH. POLIM., RIGA, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 031

TITLE--A STUDY OF THE ACTION OF FLOURINE IN THE DRINKING WATER IN A SANITARY GERONTOLOGICAL TEST -U-

AUTHOR--GABOVICH, R.D., TSIPRIYAN, V.I.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA I SANITARIYA, 1970, NR 4, PP 34-40

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLUORINE, GERONTOLOGY, METABOLISM, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1681 STEP NO--UR/0240/70/000/004/0034/0040

CIRC ACCESSION NO--AP0101736

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 031

CIRC ACCESSION NO--AP0101736

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS DATA ON THE EFFECT OF FLUORINE IN THE DRINKING WATER ON THE PROCESSES OF PHYSIOLOGICAL AGING IN AN EXPERIMENT LASTING FOR 24 MONTHS. THE EXPERIMENT WAS CARRIED OUT ON ANIMALS OF THREE DIFFERENT AGE GROUPS: THE RATS OF THE FIRST (CONTROL) GROUP DRANK TAP WATER CONTAINING 0.3 MG-L OF FLUORINE IN THE COURSE OF ALL THE EXPERIMENT; THE SECOND GROUP DRANK TAP WATER FLUORINATED UP TO A CONCENTRATION OF 1.2 MG-L AND THE THIRD GROUP DRANK WATER CONTAINING 15 MG-L OF FLUORINE. THE AUTHORS USED A GREAT NUMBER OF TESTS WHEREBY IT WAS POSSIBLE TO ASSESS THE STATE OF THE MAIN LINKS IN PROCESSES REGULATING THE METABOLISM AND BODY FUNCTIONS. ON THE BASIS OF THE RESULTS OBTAINED IT WAS CONCLUDED THAT IN THE COURSE OF AGING OF THE FIRST GROUP IRREGULAR CHANGES WERE NOTED IN VARIOUS LINKS OF THE SYSTEMS REGULATING THE METABOLISM OF BODY FUNCTIONS. SIMILAR CHANGES WERE NOTED AS WELL AMONG THE ANIMALS OF THE SECOND GROUP. THE ANIMALS THAT DRANK WATER CONTAINING 15 MG-L OF FLUORINE PRESENTED SIGNS OF FLUOROSIS AND PRONOUNCED CHANGES IN THE MORPHOLOGY AND FUNCTIONING OF MANY ORGANS.

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Steels

UDC: 669.189:539.219.1/.2

USSR

SOSKOV, D. A., SHVED, F. I., and TSIPUNOV, A. G., Chelyabinsk

"Effect of Solidification Conditions of Steel on the Degree of Its Dendritic Chemical Inhomogeneity"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 14-20

Abstract: This study concerns the characteristics of impurity distribution in a dendritic structure of steel subjected to directional crystallization at various rates. It was found that chromium distribution in a dendritic cell of carbon steel is determined by the carbon content and the crystallization rate (the duration of metal in the two-phase state). The constancy of chromium concentration in the dendritic axis at about 0.8 to 0.85 of the mean concentration has been confirmed. The dendritic inhomogeneity with respect to chromium (within the tested range of the experimental solidification) is caused primarily by separation diffusion at the interface of solid and liquid phases, the diffusion through the boundary layer, and stirring the liquid phase beyond the limits of this layer. Atom diffusion in the solid phase has no appreciable effect on chromium distribution in the cell

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

SOSKOV, D. A., et al, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 14-20

as a whole; this process, however, changes the shape of the concentration curve in the center of the interaxial section, near the cementite inclusions. Changes in chromium concentration over the cross section of a dendritic cell may be described mathematically by dividing the cell into three sectors with various types of changes in the effective distribution factor and the rate of displacement of the phase boundary.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 669.14.018.25:621.762

DOROFEYEV, Yu. G., PETROV, A. K., TSIPUNOV, A. G., USTIMENKO, V. I. MARINENKO, L. G., BATENEVA, M. K., and ORLOV, Yu. G., Novocherkassk Polytechnic Institute, Ukrainian Scientific Research Institute of Special Steel

"Structure and Properties of R18 Cermet Steel"

Kiev, Poroshkovaya Metallurgiya, No 2 (122), Feb 73, pp 56-60

Abstract: Results are presented of investigations of the production of R18 high-speed cermet steel from pulverized powders by the method of dynamic hot-pressing. Steel productions using plasticizers and production in thin-sheet metal containers are investigated. The established optimum conditions for dynamic hot-pressing of R18 steel are as follows: heating temperature 1250-1280°C, reduced pressing work 25-30 kgm/cm^3, aging time 10 min. The produced steel was practically without pores, it had a homogeneous microgranular structure corresponding to the structure of hardened steel, and it was without carbide liquation. Cutters of R18 cermet steel had a resistance twice as high as that of standard R18 steel. Three figures, seven bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC: 621.396.6.049.7(088.8)

TSIPURSKIY, E. S.

"A Device for Fixing the Position of Electronic Radio Elements"

USSR Author's Certificate No 282466, filed 24 Apr 69, published 18 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V327 P)

Translation: This Author's Certificate introduces a device for locating electronic radio elements such as tubes on circuit boards. The device contains wedge-shaped locking devices, a sleeve nut, a bracket and a spacer ring. In order to improve the reliability of location, the wedge-shaped locks are equipped with triangular inside lugs on the inner surface, detents located in the upper section, a radial groove, and a floating contact surface. On the inner tapered surface of the sleeve nut are annular projections, and the holder is equipped with an annular groove and limiters.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 62-504.1

GABASHVILI, N.V. (Corresponding Member Georgian Academy of Sciences) and TSIRAMUA, G.S., Tbilisi Institute of Instrumentation and Automization Media

"A Criterion for Evaluating Adaptive Discrete Systems"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 3, Dec 70, pp 553-556

Abstract: The classical Neumann-Shannon model based on a logical probability approach applied to the evaluation of faultless operations of cybernetic systems is not always convenient, due to the complexity of computations and insufficient clarity of the results. This is particularly bothersome in evaluating the operations of adapted discrete systems assembled from polyfunctional units. To avoid this problem a criterion of absolute flexibility has been introduced in the form of a coefficient of flexibility of the system, representing a ratio of the operational states of the system N_{op} to all possible states N_o. This simplifies the computations and leads to unambiguous results.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 681.326.34.001.24

TSIRAMUA, G. S.

"A Method of Synthesizing a Digital Unit of Variable Structure"

Teoriya nadezhnosti i massovoye obsluzh (Reliability and Queueing Theory, Moscow, Nauka Press, 1969, pp 201-208 (from RZh-avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, Mar 70, Abstract No 3B47)

Translation: A scheme is proposed for a digital unit of variable structure -- an all-purpose digital selection system. In using the all-purpose digital selection circuit for construction of a circuit of variable structure the author connects a special high-speed and highly reliable commutator to the commutation points of the universal digital selection circuit. The commutator permits automatic variation in structure of the functional assembly both before beginning operation and during the operating process. The possibility of automatic incorporating of one functional unit into any other with required accuracy permits realization of flexible and viable systems. It is also easy to construct systems capable of self-organization from the variable structure units. It is noted that the gain in reliability when using all-purpose digital selection

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USSR

TSIRAMUA, G. S. , Teoriya nadezhnosti i massovoye obsluzh (Reliability and Queueing Theory, Moscow, Nauka Press, 1969, pp 201-208 (from RZh-avtomatika, Telemekhanika i Vychislitel'naya Teknika, No 3, Mar 70, Abstract No 3B47)

is appreciably higher than for any duplication procedure. The gain turns out to be higher the more complex the system. A series of systems of specific realization using all-purpose digital selection is presented. There are nine illustrations and a seven-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC 541.18.012.4

USSR

SYCHEV, YU. N., TSIREL'NIKOV, V. I., Chair of Radiochemistry

"Study of Equilibrium Adsorption of Benzene on Carbon Blacks"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II -- Khimiya, Vol 11, No 5, Sep-Oct 70, pp 542-548

Abstract: The article describes a procedure for studying equilibrium adsorption to a temperature of ~900° C in the 1-760 torr pressure range, based on the use of a Pyrex or quartz membrane manometer. The adsorbate is benzene, the adsorbent graphitized thermal black MT-3100 and channel black. The BET equation is used for an approximate description of the benzene-graphitized thermal black MT-3100 system, i.e. for establishing the relation between P, degree of coverage θ and T in the 18-270° temperature range. The results indicate that the BET equation satisfactorily describes the temperature dependence of benzene adsorption on the graphitized black at temperatures of 60-270°, but the agreement with experimental data is worse at temperatures of 18-60°. Knowing the constants of the BET equation, it is possible to calculate the adsorption

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USSR

SYCHEV, YU. N., et al, Vestnik Moskovskogo Universiteta, Seriya II -- Khimiya, Vol 11, No 5, Sep-Oct 70, pp 542-548

isotherm for any temperature. Adsorption isotherms were calculated for 20, 30, 40, 50, 70, and 100°.

The authors thank V. G. CHUMACHKOVA, N. V. KOVALEVA, R. S. PETROVA, A. A. LOPATKIN and S. N. KRYUKOV for their assistance in the work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC: 621.372.061.42:621.272.58

TSIREL'SON, D. A.

"Prospects of Using Gyrators for Filter and Corrective-Circuit Miniaturization"

Moscow, Elektrosvyaz', No. 5, 1970, pp 50-59

Abstract: This is a design article the purpose of which is to develop RC circuits to replace inductances and transformers as circuit components since the latter are not readily subject to modern microminiaturization methods. The author defines the gyrator as a non-autonomous linear irreversible four-terminal RC network, and formulates its basic parameters. He shows that the sensitivity of its parameters can be of the same order as in passive RLC circuits, and finds that gyrators with direct-coupled transistors can be manufactured as microminiaturized integrated circuits. He concludes that the gyrator is the most promising component for operating as inductances and transformers in integrated circuits, permitting the miniaturization of corrective devices and filters in multichannel equipment for communications and data transmission.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Acc. Nr: AP0047352 Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970, Vol 104, Nr 1, pp 54-61

SURGICAL TREATMENT OF ANGINA ABDOMINALIS

A. V. Pokrovskiy, B. I. Bragin, V. S. Rabotnikov and D. M. Tsireshkin

The paper deals with the problems of diagnosis and surgical treatment of the abdominal ischemic syndrome. The authors have observed 24 patients with angina abdominalis in investigation of 281 patients with atherosclerotic occlusion of the abdominal aorta and its branches. Eight patients with angina abdominalis were operated upon with one lethal issue. It is considered that: 1) the established diagnosis of angina abdominalis is an indication to surgical therapy; 2) the approach — median laparotomy in extravasal compression of the celiac artery, left — sided thoracolaparotomy in all other cases; 3) an end-to end distal anastomosis in reconstructive operations seems to be more rational, it is more advantageous hemodynamically; 4) recognition and surgical treatment of angina abdominalis in due course eliminating ischemia enabled to avoid lethal intestinal infarction.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC: 632.95

GVERDTSITELI, I. M., MUKHASHAVRIYA, A. L., TSIRGILADZE, T. V., ADAMIYA, S. V., TALIYA, D. P., TSINTSADZE, E. S., and KAPANADZE, G. G., Institute of Plant Protection, Academy of Sciences, Georgian SSR

"Study of the Toxicity of Certain Organotin Preparations for the European Spruce Bark Beetle (Dendroctonus micans kugel)"

K izucheniyu toksicheskikh svoystv nekotorykh olovoorganicheskikh preparatov protiv bol'shogo yelovogo luboyeda (Dendroctonus micans kugel) (cf. English above), Tbilisi, 1970, 8 pp, bibliogr. 4 titles (from RZh-Khimiya, No 23, 10 Dec 70, Abstract No 23 N726 Dep)

Translation: The toxicity of some new organotin unsaturated alcohols was studied under Georgian conditions. The preparations were effective in controlling the European spruce bark beetle both in the laboratory and in the field.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 666.972.125:666.65-492.3

TSIRIN, K. SH., Candidate of Economic Sciences (VNIIESM) [Expansion unknown], and SHAL', B. V., Engineer (Scientific Research Institute of Filler Clays-NIIkeramzit)

"Effective Additives for Improving the Quality of Filler Clay (Keramzit)"

Moscow, Stroitel'nyye Materialy, No 1, Jan 74, pp 29-30

Abstract: New types of organic and organo-mineral additives are being developed to improve the quality of filler clays for cement. Clay filler materials were studied from four different raw material deposits: Kryazhskoye (Kuybyshevskaya Oblast), Mokrushinskoye (Novosibirskaya Oblast), Puzyrevskoye (Krasnoyarskiy Kray), and Kazennaya Zaimka (Bernaul) using different additives (oils, coals, emulsions, etc.). Complex organic and organo-iron suspensions can be made at a filler clay enterprise. At NIIkeramzit the basic system and working drawing have been developed for a unit that can be used for the preparation and introduction of emulsion and complex suspension correction additives in the clay raw material. This unit involves standard equipment and is simple to install and maintain. The economic potential from the use of the most effective additives amounts to (in rubles per cubic meter of gravel): 2.51--Kryazhskoye, 2.92--Mokrushikhinskoye, 7.45--Puzyrevskoye, and 6.23--Kazennaya Zaimka. One figure, two tables.

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3

UDC 576.858.25.095.38:576.895.42

USSR

L'VOV, D. K., GROMASHEVSKIY, V. L, SIDOROVA, G. A., TSIRKIN, Yu. M., CHERVONSKIY, V. I., GOSTINSHCHIKOVA, G. V., and ARISTOVA, V. A., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks Ornithodoros Coniceps in Azerbaydzhan"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago in the Caspian Sea. So far, four strains -- prototypes LEIV-28A, -35A, -36A, and -46A -- were analyzed and found to be identical. They do not agglutinate goose erythrocytes. Serological identification tests performed on the LEIV-46A prototype revealed that this strain belongs to the antigenic complex of Chenuda virus of the Kemerovo group. According to the results of complement fixation and neutralization reaction tests, the virus differs from Chenuda, Punta Salinos, Mono Lake, Kemerovo, Tribec, Lipovnik, and Wad Medani viruses. The new virus has been named "Baku virus."

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UDC 681.12:538.3:538.4

USSR

TSIRKUNOV, V. E., and ZHEYZUR, D. B.

"A Study of an Induction Batcher with an Axisymmetrical Magnetic Field for Pipes of Large Cross Section"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 146-148

Abstract: The principles of operation of an induction flow meter of the cylindrical type with internal and external magnetic circuits was examined. A description of the transducer design and block diagram of the flow meter is given. Use of this device to measure flow in large-diameter pipes makes it possible to a significant degree to eliminate the influence of transducer geometry and temperature changes of conductivity on flow meter readings and in the same manner to provide measurement of the volume flow of molten metal. 2 figures, 3 bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC 621.3:083.72:538.4

USSR

TSIRKUNOV, V. E., KALNIN', R. K., RYBAKOV, E. K.

"Measurement of Flow Velocity of Liquid Metal by Method of Relationships"

Magnitnaya Gidrodinamika, No 2, 1971, pp 133-136.

ABSTRACT: A contactless flow meter using a pulsating magnetic field inductor is described. The flow of metal being transported is defined by the relationship of the velocity and vortex signals resulting from the secondary magnetic field. The mean square error in determination of flow does not exceed 2.5%, and the indications of the flow meter do not change with a change in conductivity of the medium being tested of up to 30%.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Composite Materials

UDC 539.4

SSSR

MILEYKO, S. T., SOROKIN, N. M., and TSIRLIN, A. M., Institute of Solid State Physics, Academy of Sciences USSR

"Properties of Boron Fibers and Boron-Aluminum Composites Under Equiaxial Compression"

Kiev, Problem Prochnosti, No 6, 1973, pp 41-45

Abstract: Experimental data obtained in tests of an aluminum alloy reinforced with boron fibers are presented. Alloy D16 foil had boron fibers pressedinto it in a vacuum at high temperature. The lattice spacing of the fivers and thickness of the foil were such that the fibers were positioned in a hexagonal configuration. Samples 6 mm wide were cut on an electric spark machine from plates of the composite material measuring 50 x 100 mm and 0.7-2.5 mm thick. Experimental curves of the composite under compression were plotted in order to determine shear strength. Comparison of these graphs with corresponding curves for the matrix material yielded compression curves for the fibers which turned out to be straight lines up to a stress of 1200 kG/mm^2. The optimum volume percentage of fibers in the composite was established ($V_f = 1/3$) for a compression load in the direction of reinforcement. Six figures, two tables, 8 bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC 678:539.4.01

USSR

MILEYKO, S. T., SOROKIN, N. M., and TSIRLIN, A. M., Institute of Solid-State Physics, Academy of Sciences USSR

"The Strength of Boronaluminum, A Composite with Brittle Fibers"

Riga, Mekhanika Polimerov, No 5, Sep/Oct 73, pp 840-846

Abstract: A study was made of the failure of boronaluminum, a composite material that is typical of the metal-brittle fiber class of materials. Dispersion-hardening D16 aluminum alloy served as the matrix. Two types of boron fibers (average strength 180 and 250 kg mm^2) were used for reinforcement. The best strength properties were found in specimens with the most uniform distribution of boron fibers. Conditions are formulated under which rupture in the composite can be prevented. Six figures, two tables, eight formulas, ten bibliographic references.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC: 678.01:677.52+539.4

USSR

ZHIGACH, A. F., TSIRLIN, A. M., SHCHETILINA, YE. A., SVETLOV, I. L., GRIGOR'YEV, V. I., SHAFRANOVICH, E. G., BULYGINA, T. I., and YARTSEV, V. A., State Scientific-Research Institute of Chemistry and the Technology of Elementoorganic Compounds, Moscow

"Mechanical Properties of Boron Fibers"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 641-647

Abstract: The authors study the strength distribution of boron fibers. The study is based on a large amount of experimental material. The results show that the strength of boron fibers can be sufficiently accurately described by the Weibull or by normal rules of distribution. The parameters of these distributions are determined. The typical defects in boron fiber macrostructure are isolated and described. Mean strength as a function of tested fiber length is studied experimentally.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC 62-494:519.28

USSR

GRIGOR'YEV, V. I., and TSIRLIN, A. M.

"Statistical Checking of the Quality of Brittle Fibers and Threads"

Moscow, Zavodskaya Laboratoriya, no 5, 1973, pp 571-575

Abstract: Methods are suggested for checking the strength and diameter of high-strength brittle fibers and threads used for reinforcement in composite materials. The one-time unidirectional control by quantitative indication and the subsequent control by qualitative indication are analyzed by reference to formulas and diagrams. The application of the methods in acceptance inspections of the qualities of continuous boron threads is discussed. The methods are recommened for estimates of strength, modulus of elasticity, geometric dimensions of reinforcing fillers of various types, and of composite materials based on them. Five figures, twenty formulas, eight bibliographic references.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UDC 519.24

USSR

SOFIYEVA, YU. N., TSIRLIN, A. M.

"On the Limiting Values of the Correlation Interval and the Number of Degrees of Freedom of a Stochastic Process"

Tr. Tambovsk. in-ta khim. mashinostr. (Works of Tambov Institute of Chemical Machine Building), 1970, No 4, pp 405-410 (from RZh-Matematika, No 10, Oct 70, Abstract No 10V142)

Translation: Inequalities are obtained determining the duration of a correlation function and the number of independent ordinates of a stochastic process in terms of the number of its zeros and maxima. The inequalities found give some basis for approaching a selection of parameters for statistical processing of results obtained in an experimental determination of the characteristics of a process. Author's abstract.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INDUCED REACTIONS IN RADIOCHEMISTRY. III. EFFECT OF RADIOLYSIS PRODUCTS ON THE COURSE OF INDUCED REACTIONS -U-

AUTHOR-(03)-POSVOLSKIY, M.I., TSIRLIN, I.I., KOCHNOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 367-73

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RADIOCHEMISTRY, RADIOLYSIS, CHROMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0122 STEP NO--UR/0186/70/012/002/0367/0373

CIRC ACCESSION NO--AP0132415

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 012

CIRC ACCESSION NO--AP0132415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTORTION FUNCTION F EQUALS F(C) SUB0-(I) SUB0), WHERE C IS THE CONVERTED ACCEPTOR AND I THE INDUCTOR, OWING TO PRODUCTS OF RADIOLYSIS IS EVALUATED BY MEANS OF MECH. EXPT. THE TRADITIONAL METHOD OF DETN. OF THE MAX. VALUE OF THE INDUCTION FACTOR IS UNSUITABLE FOR SOLNS. OF RADIOACTIVE SUBSTANCES. THE SO CALLED "DIRECT" OXIDN. OF PU(IV) BY CHROMIC ACID AT ROOM TEMP. IS CAUSED, TO A SIGNIFICANT DEGREE, BY THE INDUCTION REACTION CR(VI) PLUS HNO SUB2 PLUS PU(IV) WHICH OCCURS SIMULTANEOUSLY. BY MEANS OF COMPARISON OF MECH. AND CHEM. EXPTS. IT IS SHOWN THAT HNO SUB2 IS CHARACTERIZED BY A HIGHER REACTION RATE WITH THE INTERMEDIATE FORM OF CR, THE OXIDIZING AGENT, THAN PU(IV).

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC: 621.391:519.2

TSIRLIN, I. S.

"Analysis of the Interference Resistance of a Frequency-Modulation Demodulator With Direct Subtraction of Deviations"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference--Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 155-164 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A44)

Translation: The author analyzes the interference quenching of an FM demodulator with direct subtraction of deviations. It is shown that the threshold properties of a receiver with such a device are identical to those of a receiver with a standard FM demodulator for all practical purposes when the input bands are identical. Formulas are derived for calculating the noise power at the output of a receiver with FM demodulator with direct subtraction of deviations. The theoretical results are compared with experimental data. Resumé.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Communications

USSR

UDC: 621.376.55

BRAUDE-ZOLOTAREV, Yu. M., TSIRLIN, N. M.

"A Positional Code Modulated Transmitter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319063, Division H, filed 19 Feb 70, published 28 Oct 71, p 174

Translation: This Author's Certificate introduces a positional code modulated transmitter which contains a pulse-position modulator and a coding module. As a distinguishing feature of the patent, the design provides for more efficient utilization of the traffic-handling capacity of the communications channel and improves interference suppression. Connected to the input of the device is a series circuit comprised of a pulse duration modulator, a sectionalized delay line, a phase pulse shaper, and the coding module. In addition, n outputs of the delay line are connected to n control inputs of the phase shaper and n inputs of the coding module. The coding module output serves as the output for the device.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 045 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--CHARACTERISTICS OF HEAT TRANSFER NEAR THE STAGNATION POINT FOR A TURBULENT JET IMPINGING ON A PLATE SITUATED NORMAL TO THE FLOW -U-

AUTHOR-(05)-ANDREYEV, A.A., DAKHNO, V.N., SAVIN, V.K., TSIRLIN, O.V., YUDAYEV, B.N.

COUNTRY OF INFO--USSR

SOURCE--MASHINOSTROENIE, NO. 3, 1970, P. 57-60

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HEAT TRANSFER RATE, STAGNATION POINT, TURBULENT JET, FLAT PLATE, PARAFFIN WAX, FLOW VISUALIZATION, FLOW VELOCITY, VORTEX FLOW, BOUNDARY LAYER FLOW, TWO PHASE FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0865 STEP NO--UR/0418/70/000/003/0057/0060

CIRC ACCESSION NO--AP0131452

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 045 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131452

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF EXPERIMENTS IN WHICH PARAFFIN COATED PLATES WERE USED TO VISUALIZE THE FLOW PATTERN FORMED BY AN IMPINGING TURBULENT AIR JETS EXPELLED FROM TWO DIMENSIONAL (135 TIMES 15 MM) AND AXISYMMETRIC (30 MM DIAM) NOZZLES. THE VELOCITY OF THE JETS VARIED BETWEEN 30 AND 100 M-SEC. THE JET TEMPERATURE WAS 100 DEG C. THE RESULTS INDICATE THAT THE INCREASED HEAT TRANSFER RATE AT THE FORWARD STAGNATION POINT (SPREADING LINE) IS ASSOCIATED WITH THE FORMATION OF STABLE VORTEX SYSTEM IN WHICH THE VORTICES ARE ORIENTED ALONG THE LINES OF FLOW. UNDER THE ACTION OF THIS SYSTEM, THE TWO DIMENSIONAL BOUNDARY LAYER FLOW BECOMES A THREE DIMENSIONAL FLOW, LEADING TO A SUBSTANTIAL INCREASE IN THE HEAT TRANSFER RATE.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC: 621.376.55

BRAUDE-ZOLOTAREV, Yu. M., TSIRLIN, V. M.

"A Positional Code Modulated Signal Decoder"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319064, Division H, filed 19 Feb 70, published 28 Oct 71, p 174

Translation: This Author's Certificate introduces a code-position modulated signal demodulator which contains a pulse-position modulation decoder at the output. As a distinguishing feature of the patent, the demodulator is designed for improved interference suppression and better utilization of the traffic-handling capacity of the communications channel. Connected to the input of the decoding matrix of the pulse-position modulation decoder is the output of the signal source, and connected to each of the n outputs of the decoding matrix are the controlling inputs of n selector switches, and the n inputs of an OR gate. The output of the OR gate is connected to the input of a sectionalized delay line whose outputs are connected to the second signal inputs of selector switches connected at the output of the module for shaping and decoding the pulse-position modulated pulses.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Television

USSR UDC 621.397.238:621.397.62

KOROBKOV, L. A., TSIRLIN, V. M., SHESTAKOV, Yu. N., PETROV, V. A., PALITSKIY, V. M., KHOROBRYKH, V. T., BEREZIN, I. I.

"A Device for Reception of Television Image Signals With Accompanying Audio"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288028, class 21, filed 19 Apr 67, published 3 Dec 70, p 52

Translation: This Author's Certificate introduces a device for reception of television image signals with accompanying audio combined in a single channel of a television system. The device contains a synchropulse selector, sound and image separation modules, and modules for demodulating the audio channel signals. As a distinguishing feature of the patent, the device is designed for reducing transient interference and increasing the resistance to interference of the accompanying audio channel. Connected at the input of the installation are two devices for restoring the DC component of the video signal. One of these signal-restitution devices is connected to a device for synchromixture regeneration through an electronic switch controlled by a signal from the synchropulse selector. Signals from the synchropulse selector and synchrogenerator are sent to the device for

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

KOROBKOV, L. A., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288028, class 21, filed 19 Apr 67, published 3 Dec 70, p 52

synchromixture regeneration. The second signal-restitution device is connected to a code-pulse demodulator and an amplifier through an electronic switch controlled by a signal from the synchropulse selector. The signal from the amplifier is sent to the output of the device through an optimum low-frequency filter and a bilateral clipper with low-frequency filter. Priority dates from 2 March 1967.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 621.397.132:621.397.238

TSIRLIN, V. M., SHESTAKOV, Yu. N., TARASENKOV, G. V., PALITSKIY, V. M.

"A Device for Transmitting Image Signals and Accompanying Audio in a Single Channel in a Television System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288026, class 21, filed 24 May 67, published 3 Dec 70, p 52

Translation: This Author's Certificate introduces a device for transmitting image signals and accompanying audio in a single channel in a television system based on Soviet Patent No 221029. As a distinguishing feature of the patent, the frequency band of the audio channel is expanded by connecting the output of the pulse-duration modulator to the inputs of the AND circuit both directly and through a delay line. The output of the AND circuit is connected to one of the inputs of a coincidence circuit, and the signal from a flip-flop is sent to the other input of the coincidence circuit.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 535.373.1(083.76)

BERLOVSKIY, A. YA., DAYCH, A. R., TSIRLIN, YU. A.

"The Standardization of Scintillation Products"

Kharkov, Monokristally, Stsintillyatory i Organicheskiye Lyuminofory -- Sbornik (Monocrystals, Scintillators, and Organic Luminophores -- Collection of Works), No 5, 1970, pp 278-281 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, 1970, Abstract No 12.32.1500)

Translation: We do not have as yet the conditions necessary for standardization, namely -- reliability and unity of measurements, getting a result with a specific and known error, attachment to an international system of units. This has necessitated standardization and the creation of an appropriate testing service. The system is based upon a standard scintillator (stilbene) with respect to the totality of its physicochemical and scintillation properties. We have defined the absolute technical light output of the standard (%). For all standard scintillators,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

BERLOVSKIY, A. YA., et al, Monokristally, Stsintillyatory i Organicheskiye Lyuminofory -- Sbornik, No 5, 1970, pp 278-281

model detectors have been developed with diameters equal to the heights, and standard values of the light output have been defined for types and sizes subject to standardization. The light output of these types and sizes is expressed in terms of the light output of the standard. Working specimens for the producing enterprises are compared with the model scintillators. To eliminate indeterminacy in the resolution of the scintillator, the natural resolution of NaI (Tl) is measured. Already now, interested organizations can obtain scintillation detectors of NaI (Tl), stilbene, and plastic scintillators that have been compared with the above-mentioned standard scintillator. 6 bibliographic entries.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 539.1.074.3:535.853

KRAVCHENKO, N. G., MOKHIR, YE. P., TSIRLIN, YU. A.

"Inhomogeneity of the Photoelectric Multiplier Photocathode and the Resolution of a Scintillation Spectrometer"

Khar'kov, Monokristally, Stsintillyatory i Organicheskiye Lyuminofory -- Sbornik (Monocrystals, Scintillators, and Organic Luminophors - Collection of Works), No 5, 1970, pp 193-198 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, 1970, Abstract 12.32.1559)

Translation: Present-day photomultipliers used in scintillation spectrometers possess a large (up to 50%) inhomogeneity of the photocathode sensitivity. If the light output of the crystal is unequal with respect to the area of the output window, this inhomogeneity makes an additional contribution to the resolution of the scintillation spectrometer. A study was made of the influence of the sensitivity inhomogeneity of the photocathode of photoelectric multiplier 49 upon the resolution of a scintillation spectrometer with an NaI (Tl) crystal with dimensions of 120x100 mm. To separate the contributions of the crystal, the photomul-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

KRAVCHENKO, N. G., et al, Monokristally, Stsintillyatory i Organicheskiye Lyuminofory -- Sbornik, No 5, 1970, pp 193-198

tiplier, and the photomultiplier inhomogeneity to spectrometer resolution, the method of homogeneous neutral filters and light guides was used. 2 figures, 1 table, 4 bibliographic entries.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 539.1.074.3

KIBAL'CHICH, G. A., TSIRLIN, Yu. A.

"Influence of Properties of a Scintillator on Counting Characteristic Plateau"

Monokristally i Tekhnika [Single Crystals and Technology -- Collection of Works], No 5, Khar'kov, 1971, pp 178-186, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1358, from the Resume).

Translation: The influence of the type of scintillator (S) used, the degree of its phosphorescence, conversion effectiveness, light collection, dimensions and shape of the S on the counting plateau (P) is studied. It is shown that the shape of the S has a significant influence on the P of the counting characteristic; this is determined by the form of the differential distribution and ratio of signal and noise amplitudes. Organic S have no phosphorescence, while single crystals of sodium iodide have varying degrees of phosphorescence. Increasing the conversion effectiveness improves P, while increasing the light collection factor may have varying influence on the P. An increase in the dimensions of sodium iodide single crystals improves P. Single crystals with low ratio of height to diameter have good P, while when this ratio is increased to 4-7, P is somewhat worsened. However, at the same time the sensitivity increases and becomes possible to

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 539.1.074.3

KIBAL'CHICH, G. A., TSIRLIN. Yu. A., Monokristally i Tekhnika, No 5, Khar'kov, 1971, pp 178-186.

determine the direction of propagation of γ-radiation (γ direction finding). In this case, the counting rate recorded depends on the angle formed by the axis of the S and the direction of propagation of the γ radiation. 5 Figures; 2 Tables; 12 Biblio. Refs.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--REGENERATION OF A CATALYST FOR VINYL ACETATE SYNTHESIS -U-

AUTHOR-(05)-KHACHEYAN, KH.YE., TSIRLINA, R.N., FEDOROVA, N.M., BOGOLEPOVA, YE.I., LVOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,353

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST REGENERATION, VINYL COMPOUND, ACETATE, CATALYTIC ORGANIC SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0828 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136262

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AA0136262 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CATALYST FOR VINYL ACETATE SYNTHESIS IS GENERATED BY TREATING IT WITH A CONCD. SOLN. OF KOH WHICH REMOVES CU SALTS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 619:616.988.73:636.5

TSIRO, V. A., Candidate of Veterinary Sciences, DMITRIYEV, P. V., KIR'YANOV, YE. A., and DENISENKO, R. A., Veterinary Physicians

"Bird Ornithosis Outbreak"

Moscow, Veterinariya, No 3, Mar 71, p 64

Abstract: Up to 120 different species of wild birds and farm poultry can contract ornithosis. Migrating birds transmit the disease to poultry. In the Soviet Union, the ornithosis pathogen was first detected in 1948. However, the disease was first recorded among human beings in 1969: personnel in a poultry combine were infected by sick ducks. These ducks had been in contact with pigeons inhabiting the farm and with water fowl inhabiting the neighboring lakes. Bacteriological and virological tests performed on the blood serum and on internal organs of the dicks, pigeons, and water fowl revealed an absence of bacteria and the presence of ornithosis virus. Veterinary therapeutic and preventive measures were taken immediately. The disease was eradicated, and no cases of ornithosis have been recorded since then.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

UNCLASSIFIED

ITLE--RADIOPHYSICAL RESEARCHES IN THE AURORAE ZONE -U-

UTHOR-(05)-PONOMAREV, YE.A., SVERDLOV, YU.L., PYATSI, A.KH., VERSHININ, YE.F., TSIRS, G.P.

OUNTRY OF INFO--USSR

OURCE--KAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 5-11

ATE PUBLISHED--------70

UBJECT AREAS--ASTRONOMY,ASTROPHYSICS, ATMOSPHERIC SCIENCES

OPIC TAGS--AURORA, RADIO EMISSION, UPPER ATMOSPHERE, SOLAR ACTIVITY

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED

ROXY REEL/FRAME--1994/0070 STEP NO--UR/3307/70/000/019/0005/0011

IRC ACCESSION NO--AP0114466

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 028

UNCLASSIFIED

IRC ACCESSION NO--AP0114466 PROCESSING DATE--09OCT70

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DRAWS CERTAIN CONCLUSIONS AS THE RESULT OF RADAR RESEARCHES ON UHF AND SHF, AS WELL AS CONTINUOUS ULF ON THE RADIO EMISSION OF AURORAE AND THE UPPER ATMOSPHERE IN THE AURORAE ZONE, CARRIED OUT IN THE SOVIET UNION. THE PAPER PRESENTS PRELIMINARY RESULTS OF COMPARISON OF PHENOMENA IN THE PERIOD OF THE MAXIMUM AND MINIMUM OF SOLAR ACTIVITY.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ON THE EXPERIENCE OF SIMULTANEOUS REGISTRATION OF ULF EMISSION AND AURORAE INTENSITY -U-

AUTHOR-(02)-ROLDUGIN, V.K., TSIRS, G.P.

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 29-31

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--AURORA, PULSATION, ELECTRON, HYDROGEN, VERY LOW FREQUENCY, RADIO EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0106 STEP NO--UR/3307/70/000/019/0029/0031

CIRC ACCESSION NO--AP0114502

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS RESULTS OF THE ANALYSIS OF THE SIMULTANEOUS RECORD OF AURORA INTENSITY AND ULF EMISSION ON FREQUENCIES 425 HZ, 725 HZ AND 11 KHZ. IT HAS BEEN DISCOVERED THAT 1) DURING AURORA THE INTENSITY OF THE ULF EMISSION ON ALL FREQUENCIES IS REDUCED; 2) AT THE MOMENT OF APPEARANCE OF PULSATING AURORA ON THE 425 HZ FREQUENCY THE PULSATIONS WITH THE PERIOD 2-4 TIMES GREATER THAN THE PERIOD OF AURORA PULSATIONS ARE OBSERVED; ON THE 725 HZ FREQUENCY THE BURST OF THE ULF EMISSION WITHOUT QUASI PERIODIC STRUCTURE IS ALSO RECORDED. FURTHER DEVELOPMENT OF PULSATIONS OF AURORA AND ULF EMISSION OCCURS INDEPENDENTLY. THIS CHARACTER OF CONNECTIONS SHOWS THAT THE ORIGIN OF BOTH PHENOMENA IS CAUSED BY ONE AND THE SAME EVENT, I.E. THE STREAM OF ENERGY PARTICLES, BUT THE ENERGIES OF PARTICLES (ELECTRONS) RESPONSIBLE FOR THESE PHENOMENA ARE DIFFERENT. DURING PULSATING AURORA THE HYDROGEN EMISSIONS ARE EITHER NOT OBSERVED AT ALL, OR THEIR INTENSITY IS SMALL.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 591.438.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I., GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z., MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P., KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional Morphology, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog Rana temporaria in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized Rana temporaria eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during

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USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

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(5)

JPRS 60634
27 NOVEMBER 1973

EFFECT OF THE CURRENT LOAD ON THE THERMAL CONDITIONS OF A MAGNETOHYDRODYNAMIC MACHINE

(Abstract of a Paper by Yu. Ya. Mikel'anp, Yu. P. Ushakov, T. T. Tsirulis, E. P. Shilter, Ya. R. Shmit, Given at the Magnetohydrodynamic Conference, p 145)

For large current loads in magnetohydrodynamic machines and active heat exchange between the structural elements of the device and the external environment, nonlinear thermal effects can play a significant role.

In this paper an effort was made to calculate the nonlinear thermal losses Q in the current-carrying elements of the structure of the conduction pump for large current loads. Here, the temperature dependence of the thermal physical parameters of the material and the thermal radiation are taken into account.

The basic assumptions are the following: the thermal losses are defined by the Joule's law in the form

$$Q = \int_V \frac{|\vec{E}|^2}{\rho(T)}\, dv, \qquad (1)$$

where $\vec{E}$ is the intensity of the electric field in the conductor,

$\rho(T)$ is the specific electrical resistance of the material which depends on the temperature. For large current loads J, the linear approximation of Joule's law

$$Q = R_0 J^2, \quad R_0 = \text{const} \qquad (2)$$

is not valid. The integral resistance R determining the energy dissipation in the current-conducting elements of the structure are calculated by the formula

$$R(J) = Q(J)/J^2. \qquad (3)$$

The dependence of the losses on the current J is uniquely defined by the distribution of the temperature T inside the conducting body considering the specific heat transfer and heat exchange methods. The thermal radiation is subject to the Stefan-Boltzman law.

10,845
CSO: 8044/0653-W

TSIRULIS, T. T.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

TSIRULIS, T. T.; SHILTER, E. P. (Latvian Order of Labor Red Banner State University)

"Nonstationary Temperature Behavior of a Conductor with a Nonlinear Heat Source"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR: Seriya Fizicheskikh i Tekhnicheskikh Nauk; January-February, 1973; pp 68-78

ABSTRACT: The method of a functional series is proposed for the solution of a composite problem involving a heat conductivity equation with a nonlinear heat source. The solution is in the form of a power series, the variable coefficients of which reduce to the Cauchy problem for a system of N ordinary differential equations and a passage to the limit as $N \to +\infty$. In the case of a linear problem the method results in a solution similar to that obtained by the Fourier method if the orthogonal properties of the eigenfunctions of the spectral operator are not considered. The determination of a nonstationary temperature field for a cylindrical conductor is presented as an example of a nonlinear problem.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

TSIRULIS, Ya. P. UDC:51.01:164

"Quasilinear Functions and Pre-filled Classes"

Latv. Mat. Yezhegodnik [Latvian Mathematics Annual], No. 7, 1970, pp. 283-288 (Translated from Referativnyy Zhurnal Matematika, No. 12, 1970, Abstract No.12A57 by the Author)

Translation: Several theorems are proven, revealing the relationship between classes of quasilinear functions defined in various additive abelian groups of a special type over the same set E_k. This is used to prove the pre-fullness of these classes (see Section 3 of theorem of Rozenberg, RZHMat, 1966, 5V185); their number is found, as well as the number of functions n of arguments in them.

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053

UNCLASSIFIED

TITLE--MEASUREMENT OF THE ACOUSTIC CONDUCTIVITY OF A BURNING SOLID PROPELLANT SURFACE -U-

PROCESSING DATE--30OCT70

AUTHOR-(04)-MARGOLIN, A.D., SVETLICHNYI, I.B., POKHIL, P.F., TSIRULNIKOV, A.S.

COUNTRY OF INFO--USSR

SOURCE--PMTF ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNICHESKOI FIZIKI, JAN.-FEB. 1970, P. 149-155

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS, PHYSICS

TOPIC TAGS--SOLID PROPELLANT, MEASUREMENT, SURFACE PROPERTY, ACOUSTIC MEASUREMENT, PROPELLANT BURNING RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1543

STEP NO--UR/0207/70/000/000/0149/0155

CIRC ACCESSION NO--AP0118526

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 053

CIRC ACCESSION NO--AP0118526 UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT AND APPLICATION OF TWO METHODS OF MEASURING THE ACOUSTIC CONDUCTIVITY OF A BURNING SOLID PROPELLANT SURFACE NAMELY, THE METHOD OF CRITICAL CONDITIONS AND THE VARIABLE SURFACE METHOD. THE METHOD OF CRITICAL CONDITIONS IS BASED ON MEASURING THE LIMIT OF SELF EXCITATION OF UNSTABLE COMBUSTION IN RESONATORS OF SIMPLE SHAPE THE ACOUSTIC LOSSES OF WHICH ARE RELIABLY CALCULATED. THE VARIABLE SURFACE METHOD CONSISTS IN MEASURING THE RATE OF INCREASE OR DECREASE IN THE AMPLITUDE OF THE OSCILLATIONS IN A T CHAMBER DURING COMBUSTION OF A SPECIMEN OF SOLID PROPELLANT WITH A BURNING SURFACE THE AREA OF WHICH VARIES IN TIME.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 612.85

GAVRILOV, L. R., GERSHUNI, G. V., IL'INSKIY, O. B., SIROTYUK, M. G., TSIRUL'-NIKOV, Ye. M., and TSUKERMAN, V. A., Laboratory of the Physiology of Hearing, Institute of Physiology imeni I. P. Pavlov, USSR Academy of Sciences, Laboratory of the Physiology of the Sensory Organs, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Laboratory of General Physiology of Reception, Institute of Physiology imeni I. P. Pavlov, and Laboratory of Ultrasonic Cavitation, Acoustics Institute, USSR Academy of Sciences

"Study of the Skin Sensitivity by Means of Focused Ultrasound"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,366-1,371

Abstract: A study was made of the effect of focused ultrasound on the skin of a human hand. The sensitivity of the skin of the palm surface of the fingers, wrist and lower third of the forearm was investigated in five people (2 men and 3 women). The sensitivity thresholds were determined with a gradual increase and decrease in the stimulus. As a rule, the thresholds were higher with an increase in stimulus. The intensity for which no less than 50% positive responses occurred to 8-10 stimulations was taken as the threshold. Stimulation of the skin by identical stimuli with an intensity of 30-500 watts/cm^2 usually

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USSR

GAVRILOV, L. R., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,366-1,371

aroused a tactile sensation, the nature of which depended on the stimulated section. When the focal point went deeper into the tissue, the tactile thresholds gradually increased and, finally, the sensation gradually went away altogether (and then in certain cases reappeared on the opposite side). The effect of sound streams on the occurrence of tactile sensations was tested leading to tickling sensations and sensations of heat and cold. Pain occurred at intensities of 1,400-1,600 watts/cm2 lasting 100 milliseconds and more.

The mechanism of the effect of the focused ultrasound and its value in the study of the receptor structures are discussed. All the basic types of feelings in the skin can be isolated by the application of ultrasound.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

ZNAMENSKIY, G. N., TSISAR', I. G., and KRIVONOS, V. S., Kiyev Polytechnic Institute, Vinnitsa Branch [redacted]

UDC 620.193.27

"Special Features of Electrochemical Characteristics of Stainless Steels and AMG-61 Aluminum Alloy in Sea Water"

Moscow, Zashchita Metallov, Vol 7, No 6, Nov-Dec 71, pp 715-717

Abstract: Effects of surface conditions, holding time in sea water, moving speed, and water temperature on the electrochemical characteristics of 1Kh18N9T, 1Kh14ND, and 1Kh20N5G12BA stainless steels and AMG-61 aluminum alloy were investigated in natural Black Sea water under laboratory conditions and at sea. The polarization characteristics of stainless steels and the AMG-61 alloy differed considerably: the cathode polarizability at sea was lower but the limiting current of oxygen diffusion and the breakthrough potential of the protecting layer, which is the most sensitive electrochemical characteristic, were higher than under laboratory conditions. Investigations at sea revealed for stainless steel a refining of the corrosion potential in winter and a shift to the negative side in summer, and for the AMG-61 alloy - a continuous shift to the positive side. Values of the breakthrough potential of the protective layer of stainless steels and the AMG-61 alloy are discussed and compared with data from other corrosion tests. Two illustr., two tables, eight biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

Instruments and Measurements

UDC: 621.374.32

DUBIK, L. and TSISEK, Z.

"Decade Counter at 200 MHz"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 95-98

Abstract: The need for the instrument described by this article arises in the use of scintillation and Cerenkov counters whose pulse shapers and coincidence circuits attain frequencies of as much as $2 \cdot 10^8$ pulses per second. The instrument is designed to accommodate such high pulse rates, counting frequencies as high as 200 MHz. Using germanium tunnel diodes and transistors, it contains a binary cell, a pulse-shaping stage, a quinary cell, an output shaping circuit, and a decoder with a decade state indicator circuit. The quinary cell has an unusual feature: to reduce the base current of the saturated transistor and thus increase its speed of action, a tunnel diode is connected to the base through a voltage divider. By the use of such voltage dividers in the base circuits of the transistors, the limiting frequency of the quinary cell was raised from 47 to 110 MHz. Schematics of the decade and of its state indicator circuit are given with an explanation of their operation. Members of the United Institute of Nuclear Research at Dubna, the authors express their gratitude to V. G. Zinov, I. F. Kolpakov, and V. I. Rykalin for their comments.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Metrology, Surveying, Mapping, Graphs

USSR

TSISIS, A. Kh.

UDC 389.0:681.2.019.3

"Method of Analytical Evaluation of the Parameters of the Metrological Reliability of Measuring Facilities"

Moscow, Metrologiya, No 3, 1972, pp 8—17

Abstract: The parameters of the metrological reliability of measuring facilities are evaluated and a method is discussed for determining the mathematical expectation and the standard deviation of the error of the measuring facility. The method is based on the use of an a priori information of the change of parameters of its components by a change of the operation conditions and in the process of aging. In calculating the gradual failure, the distribution density of the failure of the measuring facility is only a function of time, the mathematical expectation and the standard error deviation are monotone functions slowly changing

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

TSISIS, A. KH., Metrologiya, No 3, 1972, pp 8-17

in time. An equation characterizing the error of the measuring facility was derived and the calculation of its metrological reliability is demonstrated on an example and graphs of changing probabilities of a reliable operation in time. The use of the suggested method decreases considerably the volume of testings of measuring facilities with a high level of standard or unified components. Three illustr., 22 formulas.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 022

UNCLASSIFIED

TITLE--SEPARATION OF THE HYDROCARBON PORTION OF THE OIL FRACTION OF RHAEOPISSITE THERMOPLASTICIZER EXTRACT FROM NONHYDROCARBON COMPOUNDS

PROCESSING DATE--20NOV70

AUTHOR-(03)-TSISKARISHVILI, P.D., IOSAVA, I.G., GELASHVILI, N.S.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57 (2), 337-40.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PETROLEUM PRODUCT, CRUDE OIL, AROMATIC HYDROCARBON, SPECTROPHOTOMETRIC ANALYSIS, UV SPECTRUM, CHROMATOGRAPHIC ANALYSIS, PLASTICIZER, THERMOPLASTIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1307

STEP NO--UR/0251/70/057/002/0337/0340

CIRC ACCESSION NO--AP0134931

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 022

CIRC ACCESSION NO--AP0134981 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OIL FRACTION OF RHABDOPISSITE THERMOPLASTICIZER EXT. (N PRIME20 SUBD 1.556, HETEROCYCLIC ATOMS 4 WT. PERCENT, ER NO. 76, AND MOL. WT. 555) WAS SEPD. ON A SILICA GEL CHROMATOG. COLUMN AND THE RESULTING HYDROCARBON PART (C 87.59, H 12.37, NONHYDROCARBONS 0.04 WT. PERCENT, D PRIME20 SUB4 0.934, N PRIME20 SUBD 1.539, AND MOL. WT. 574) WAS STUDIED BY USING VACUUM DISTN., BY HEATING AT 280-320DEGREES FOR 32 HR, AND BY SPECTROPHOTOMETRY IN THE UV REGION. THE HYDROCARBON PART INVESTIGATED CONSISTED OF PARAFFINS AND NAPHTHENES PLUS SMALL AMTS. OF AROMATIC COMPDS. MOST OF THE AROMATIC HYDROCARBONS IN THE OIL FRACTION WERE LOST DURING THE CHROMATOG. SEPN.

FACILITY: INST. FIZ. ORG. KHIM. IM. MALIKISHVILI, TBILISI, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

TSISKRELI, G. S., LOLADZE, A. V.

UDC 539.4:624.012

"Calculation of Combination Concrete and Reinforced Concrete Structural Members"

Izv. Tbilisk. n.-i. in-ta sooruzh. i gidroenerg. (News of the Tbilisi Scientific Research Institute of Installations and Hydroelectric Power), 1969, 32, pp 47-58 (from RZh-Mekhanika, No 3, March 1970, Abstract No 3V847)

Translation: Methods of strengthening reinforced concrete using "armoscement" (thin-walled reinforced-concrete strips) are evaluated. Theoretical premises and derivations of working formulas are presented on the basis of principles of limiting states for a combination of ordinary reinforced concrete plus thin-walled reinforced concrete structural members subjected to the static action of central and eccentric compression, transverse bending, and axial tension. Bibliography: 4 entries.

Resume

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

SAVCHENKO, I. S., KHORUNZHIY, V. A., TSIS'MENETSKIY, V. A., ZVEREV, G. I.

UDC 621.391.2

"Single Radio Pulse Frequency Spectral Analyzer"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 103-105

Abstract: A 48-channel analyzer is described which permits the frequency spectrum of single radio pulses to be obtained. The operating range of the analyzer is 0.5-30 megahertz, its frequency resolution is 40 kilohertz in the two megahertz band, and its time resolution is 48 microseconds.

The schematic diagram, the theoretical basis and operating characteristics of the analyzer are presented.

In the analyzer, from the sinchro pulse received from an experimental device, signals are generated for triple triggering of the driver sweep of the indicator, and a step voltage (3 steps) is shaped to create vertically displaced scans on the display screen. The time intervals between readings can be regulated from 50 microseconds to 2 milliseconds. As a result of triple interrogation of the frequency selection channels during the pulse, it is possible to investigate the dynamics of the process. The cathode ray tube of the memory oscillograph is used to display the results of the analysis. A typical oscillogram is presented. The analyzer can be used to measure the frequency in a single radio pulse, the frequency deviation and its harmonics, the instantaneous frequency spectrum, and several instantaneous spectra during the investigated pulse.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 669.295.018.9(088.8)

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TURKINA, A. N., ODOYEVSKIY, L. S., KHAZANOVA, T. P., KARSANOV, G. V., ANOSHKIN, N. F., TSISTYAKOV, Ye. P., PAVLOV, A. G., TRUBIN, A. N., and TETYUKHIN, V. V.

"Master Alloy for Production of High-Strength Titanium Alloys"

USSR Author's Certificate No 309061, filed 15/07/69, published 20/09/71 (Translated from Referativnyy Zhurnal Metallurgiya, No 3, 1972, Abstract No 3G159P by G. Svodtseva)

Translation: A master alloy for the production of high-strength Ti alloys, containing Mo, V, and Al. To increase the quality of the ingots produced, the alloy includes Cr and Fe with the following relationships of components (in %): Mo 32-34, V 32-34, Al 18-22, Cr 6-8, Fe 5-7. The master alloy can be produced either by direct smelting of the metals in an open induction furnace or by an aluminothermal method in a furnace.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

AYZENBERG, N. N., SEMYON, I. V., TSITKIN, A. I.

"Magnitude of the Class of Functions of k-Valued Logic of n Variables, Represented by Modulo k Polynomials"

Mnogoyustoych. Elementy i ikh Primeneniye [Multistable Elements and Their Applications -- Collection of Works], Moscow, Sov. Radio Press, 1971, pp 78-83, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V349 by G. Gavrilov).

Translation: It is known (RZhMat, 1959, 9704) that the system of mod k polynomials is full in P_k when and only when k is a simple number. With composite k, it is interesting to estimate the number of functions of n variables $x_1, \ldots, x_n$, represented by mod k polynomials. In this work, a formula is produced allowing determination of the number of functions of P_k dependent on the n variables $x_1, \ldots, x_n$ and represented by polynomials in mod. k for any $k \geq 2$ and any $n \geq 1$. The author's represent the set of all such functions as $R(k, n)$, and their number (the magnitude of set $R(k, n)$) as $|R(k, n)|$. If p is a simple number and $\alpha \geq 1$, then

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

AYZENBERG, N. N., SEMYON, I. V., TSITKIN, A. I., Mnogoyustoych. Elementy i ikh Primeneniye, Moscow, Sov. Radio Press, 1971, pp 78-83.

where $|R(p^{\alpha}, 1)| = p^{\sum_{i=1}^{\alpha} i[m(p^{\alpha-i+1})-m(p^{\alpha-i})]}$

$m(p^0) = -1$, $m(p^{\beta}) = \gamma \cdot p - 1$, $\beta \geq 1$ and γ satisfies the inequalities:

and

$$\gamma + \left[\frac{\gamma}{p}\right] + \left[\frac{\gamma}{p^2}\right] + \ldots \geq \beta$$

$$\gamma - 1 + \left[\frac{\gamma-1}{p}\right] + \left[\frac{\gamma-1}{p^2}\right] + \ldots < \beta.$$

Where $n \geq 2$, the following relationship is correct: $|R(p^{\alpha}, n)| = \prod_{i=1}^{\alpha} |R(p^i, n-1)|^{m(p^{\alpha-i+1})-m(p^{\alpha-i})}$. Finally, if $k = p_1^{\alpha_1} \cdot p_2^{\alpha_2} \ldots p_s^{\alpha_s}$, where $p_1, p_2, \ldots, p_S$ are simple divisors of number k, then $|R(k, n)| = \prod_{i=1}^{s} |R(p_i^{\alpha_i}, n)|$.

Abstractors Note. There are many misprints in this work. The most important one is in formula (3): there should be a minus sign before the

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

AYZENBERG, N. N., SEMYON, I. V., TSITKIN, A. I., Mnogoyustoych. Elementy i ikh Primeneniye, Moscow, Sov. Radio Press, 1971, pp 78-83.

$m(p^{\alpha-1})$ in the exponent.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

TSITKIN, A. I.

SO: JPRS 55252
23 FEB 72

SIMPLE TESTORS

UDC 51:155.001.57:681.3.06

[Article by N. N. Ayzenberg, A. I. Tsitkin, Uzhgorod State University; Moscow, Doklady Akademii Nauk SSSR, Russian, Vol 201, No 6, 1971, pp 801-802]

The concept of a test was introduced by S. V. Yablonskiy[1] to solve problems for the control of electrical circuits. The idea of a concept of a test has proven to be so fruitful that the use of a testor (a modification of the concept of a test), which has been developed in works by Yu. I. Zhuravlev, A. N. Dmitriyev, V. F. Krendelev (see, for example,[2]), has established an entire trend in the theory of model recognition.

This work introduces the concept of a simple testor which can be conveniently used in various questions of classifying objects in particular in technical diagnostics.

We use all concepts information and notations relating to the theory of Boolean functions in accordance with.[3]

Let $E = E_{k_1} \times E_{k_2} \times \ldots \times E_{k_n}$ be a Cartesian product of the sets $E_{k_i} = \{0, 1, \ldots, k_i - 1\}$, $i = 1, 2, \ldots, n$, and E, where $A_i \cap A_j = \phi$ for $i \neq j$. Let us call the collection $[A_1, A_2, \ldots, A_s]$ be a collection of the subsets of the set $[A_1', A_2', \ldots, A_s']$ the study sample of the collection $[A_1, \ldots, A_s]$, if $A_i' \subseteq A_i$, $i = 1, 2, \ldots, s$. The recognition problem exists in the relationship of the vector $b \in \bigcup_{i=1}^{s} A_i$ to one of the classes A_i, if the collection $[A_1, A_2, \ldots, A_s]$ is not known, but its study sample is given.

Let us designate the functions $\pi_1, \pi_2, \ldots, \pi_n$, given in E such that $\pi_i((\alpha_1, \alpha_2, \ldots, \alpha_n)) = \alpha_i$, $(\alpha_1, \ldots, \alpha_n) \in E$, $i = 1, \ldots, n$ the test.

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USSR

TSITOVICH, I. K., Department of Inorganic and Analytical Chemistry, Kuban Agricultural Institute

UDC 543.544

"On the Effect of Magnetic Treatment on Ion-Exchange Sorption"

Ivanovo, IVUZ Khimiya i Khimicheskaya Tekhnologiya, Vol 13, No 9, 1970, pp 1290-1293

Abstract: The author studied the effect of magnetic treatment on exchange equilibrium between cation-exchange sorbents (KU-2 N-cationite, chromatographic aluminum oxide) and the ions of a solution. It was found by determining the equilibrium coefficients that magnetic treatment of the initial ion solution, the sorbent suspension, and also the liquid and solid phases before they are brought into contact causes a noticeable shift in ion-exchange equilibrium toward increasing sorption of copper (II), zinc, calcium and iron (III) cations. It was also found that magnetic treatment has various effects on the exchange sorption of ions, which may open up new possibilities for chromatographic separation of mixtures of ions by taking advantage of these differences. Magnetic treatment of a solution of calcium salt, or treatment of the solution and the sorbent, increases somewhat the total dynamic exchange capacity of KU-2 N-cationite with respect to the calcium cation. 1/1

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Miscellaneous

USSR UDC 534.014.2

KHUDAYBERDIYEV, R., TSITOVICH, P. A., Tashkent Electrical Engineering Institute of Communications, Tashkent Institute of Engineers for Irrigation and Mechanization of Agriculture

"Toward a Theory of Transition Processes in Nonlinear Systems"

Tashkent, Izvestiya Akademii Nauk Uzbek SSR, Seriya Tekhnicheskikh Nauk, No. 2, 1972, pp 38-42

Abstract: The integral manifold method of N. N. Bogolyubov and Yu. A. Mitropol'skiy and the small parameter method of Poincaré and Lyapunov are combined to investigate the dynamic system

$$\left.\begin{aligned} &\frac{d^2\Phi_i}{d\tau^2} = f_i\left(\Phi_j;\ \frac{d\Phi_j}{d\tau}\right) + \\ &+ F_i\left(\Phi_j;\ \frac{d\Phi_j}{d\tau}\right) + B_i \cos\tau \\ &(i = \overline{1, n}),\ (j = \overline{1, n}) \end{aligned}\right\} \quad (1)$$

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

KHUDAYBERDIYEV, R., TSITOVICH, P. A., Izvestiya Akademii Nauk Uzbek SSR, Seriya Tekhnicheskikh Nauk, No. 2, 1972, pp 38-42

where f_i are nonlinear functions, F_i are nonlinear holomorphic functions, and B_i are certain constants. The steady-state made is found and the process of setting it up is described. The perturbed transition manifold is expressed in terms of the generating manifold through the use of power expansions suitable for brief transition processes. The technique of structural perturbations reflects the specific characteristics of the commutation transition phenomena and is also suitable for noncommutation transition processes. The method gives an analytical description of the effect of nonlinearities on dynamic systems with a large number of branches. In many cases the briefness of the transition process is technically feasible, so the given method is valid from an engineering standpoint.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 536.45

SHPIL'RAYN, E. E., YAKIMOVICH, K. A., and TSITSARKIN, A. F.

"Investigation of Boron Oxide Density at High Temperatures by the Hydrodynamic Weighing Method"

Moscow, Teplofizika Vysokikh Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 67-73

Abstract: The hydrodynamic weighing method consists of immersing a molibdenum sphere suspended by a thin wire from a balance into liquid boron oxide; the sphere moves up or down depending on the pull of the balance; the movement is slow due to the high viscosity of boron oxide. The velocity of this motion is plotted versus the balance pull. The equilibrium condition corresponds to zero velocity, it is used to calculate the density of the boron oxide.

The density obtained by this method in the temperature range from 850 to 2000°C is presented. The relative error is within 0.25%.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 551.586

LIOPO, T. N., and TSITSENKO, G. V.

Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka (Climatic Conditions and Human Thermal State), Leningrad, Hydrometeorological Publishing House, 1971, 152 pp

Translation: Foreword: In recent years both in our country and abroad, research in the field of human biometeorology has significantly intensified. One of the central questions of biometeorology is studying the effect of meteorological factors on thermal balance and the human thermal condition. Such research involves significant difficulties; until recently it was not possible to make a full assessment of the effect of solar radiation on the human organism or to study the characteristics of the effect of the energy of solar radiation on the human body in different climatic regions. In addition, the human thermal state under natural conditions has hardly been investigated at all as a function of the entire range of meteorological factors, nature of clothing, and physical work. The necessity of considering these indicators arises from the practical tasks involved in creating effective means to protect human beings against unfavorable climatic conditions, when establishing norms for open-air labor, designing clothing and housing, evaluating climate from a hygienic point of view, and so on.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

LIOPO, T. N., and TSITSENKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

The physically substantiated method for calculating the thermal state of the human body proposed by M. I. Budyko makes it possible to unambiguously assess the effect of climatic conditions on the human thermal state. Such an evaluation of climate may be done in two ways:

1) with prescribed thermal insulation of clothing and meteorological factors, the basic, objective indicator of the thermal state -- the average temperature of the surface of the human body can be calculated;

2) with prescribed meteorological factors, that thermal insulation of clothing which ensures a certain thermal state can be calculated.

In their research, various authors use both of these possibilities. But when calculating the temperature of the body surface, especially for states which deviate substantially from comfortable parameters, physiological reactions may occur in the organism which are not considered by the thermal balance equation; in this case, an incorrect result may be obtained.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

LIOPO, T. N., and TSITSENKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

We used the thermal balance equation to calculate the thermal isolation of clothing which ensures thermal comfort, that is, the second way was employed. Under conditions of thermal comfort, physiological reactions occur with least strain and the equation which models the physiological process makes it possible to consider physiological parameters with great accuracy. It is not an accident that the best correspondence between calculated and experimentally determined values for thermal insulation of clothing are observed with this method.

Clothing which is designed with due regard for climatic characteristics makes it possible to expand the zone of thermal comfort, protects a person not only against cold, but against excessive overheating, and increases his work capacity. Such clothing is particularly essential in the mastering of new regions, where well-appointed housing does not appear immediately and the artificial microclimate which ensures a certain level of thermal state is created primarily by clothing. It is also necessary to consider that there are a large number of occupations (geologists, construction workers, hunters, military servicemen, and so on), which require that a person spend long periods out of doors.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

LIOPO, T. N., and TSITSENKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

We have determined the thermal protection qualities of clothing which are necessary to create a comfortable human thermal state for the entire territory of the Soviet Union. Despite the fact that these thermal protective properties of clothing were established using only many years of average monthly values (while probable fluctuations in meteorological factors during a certain period were not taken into account), these calculations may be used for the purposes of hygiene, construction, and so on.

Thermal insulation of clothing calculated according to average monthly values of meteorological factors is an important criterion for bioclimatic evaluation of the effect of climate on the human thermal state. A consideration of probable changes in the characteristics of climate is particularly significant for the territories of Siberia and the Far East, which are being extensively settled at the present time. It has turned out to be possible to solve this problem by using the methods of mathematical statistics. Statistical analysis has also made it possible to isolate the primary meteorological factors which affect the human thermal state, which made it possible to construct a nomogram for calculating the thermal insulation of clothing required to ensure thermal comfort.

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USSR

LIOPO, T. N., and TSITSNEKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

Chapters 1, 2, 4, 5, 9, and 10 were written by G. V. Tsitsenko, while chapters 3, 6, 7, 8, and 11 are by T. N. Liopo.

The authors of the book are sincerely grateful to corresponding member of the Academy of Sciences USSR M. I. Budyko, Academician of the Academy of Sciences USSSR V. B. Sochava, senior scientific associate at the Main Geophysical Observatory imeni A. I. Voyeykov, N. A. Yefimova, and Candidate of Medical Sciences Ye. I. Ignat'yev for their great help in completing this work. In addition, we express our sincere thanks to Doctor of Geographical Sciences B. A. Ayzenshtat, reviewer and editor of the manuscript, for his valuable remarks.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

LIOPO, T. N., and TSITSNEKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

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LIOPO, T. N., and TSITSNEKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

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LIOPO, T. N., and TSITSNEKO, G. V., Klimaticheskiye Usloviya i Teplovoye Sostoyaniye Cheloveka, Hydrometeorological Publishing House, 1971, 152 pp

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC: 519.2

TSITSIASHVILI, G. Sh.

"On Determining Sufficient Conditions of Ergodicity of Markov Processes in Terms of a Lyapunov Function"

Tr. Konf. Mosk. fiz.-tekhn. in-ta, 1970. Ser. "Aerofiz. Prikl. mat." (Works of the Conference of the Moscow Physicotechnical Institute, 1970. "Aerophysics and Applied Mathematics" Series), Moscow, 1971, pp 120-126 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V57)

Translation: The author proves a theorem which gives sufficient conditions of ergodicity of a Markov process in terms of a Lyapunov function. Application of the theorem is illustrated by a comparatively simple proof of the sufficiency of Karlin and McGregor conditions for ergodicity of the process of death and birth without studying the Kolmogorov – Chapman equations of this process. V. Ivanov.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--FEATURES OF THE FARADAY EFFECT IN HIGHLY DOPED SEMICONDUCTORS -U-

AUTHOR--TSITSISHVILI, E.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(1), 83-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FARADAY EFFECT, SEMICONDUCTOR CARRIER, MATHEMATIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0531 STEP NO--UR/0020/70/190/001/0083/0085

CIRC ACCESSION NO--AT0048772

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0048772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATH. TREATMENT IS PRESENTED FOR ELUCIDATION OF THE CAUSE OF THE DECREASE OF ELLIPTICITY OF THE FARADAY EFFECT IN SEMICONDUCTORS WITH INCREASING CONCN. OF DOPANT ATOMS (N IS GREATER THAN 2 TIMES 10 PRIME18-CM PRIME3). INTERACTION OF CHARGE CARRIERS WITH RANDOMLY DISTRIBUTED DOPANT ATOMS IS CONSIDERED. AN EXPRESSION IS DERIVED WHICH CAN DET. THE ROOT MEAN SQUARE FLUCTUATION OF SHIELDING POTENTIAL OF DOPANT ATOMS BY USING ELLIPTICITY MEASUREMENTS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--KNIGHT SHIFT IN DOPED SEMICONDUCTORS -U-

AUTHOR--TSITSISHVILI, E.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 186-90

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, IMPURITY SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1718 STEP NO--UR/0449/70/004/001/0186/0190

CIRC ACCESSION NO--AP0120430

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0120430

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNIGHT SHIFT WAS CALCD. IN DOPED SEMICONDUCTORS, TAKING INTO ACCOUNT CURRENT CARRIER IMPURITY INTERACTIONS IN THE CLASSICAL APPROACH. FOR THE ULTRAQUANTUM CASE, SATN. IS ACHIEVED, I.E. IN THE RELATIVE SHIFT BECOMES PROPORTIONAL TO THE RECIPROCAL OF MAGNETIC FIELD STRENGTH. MEASUREMENTS OF KNIGHT SHIFTS IN THE REGION OF SATN. IN DEGENERATE SEMICONDUCTORS MAKE IT POSSIBLE TO DET. EXPTL. THE MEAN SQUARE FLUCTUATION OF IMPURITY POTENTIAL. FROM THIS POINT OF VIEW, THE INVESTIGATION OF THE TEMP. DEPENDENCE OF THE KNIGHT SHIFT IN NONDEGENERATE SAMPLES IS ALSO OF INTEREST. FACILITY: INST. KIBERN., TBILISI, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INTERBAND FARADAY EFFECT IN DOPED SEMICONDUCTORS -U-

AUTHOR--TSITSISHVILI, E.G.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, MAR. 1970, P. 461-465

DATE PUBLISHED----MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FARADAY EFFECT, INPURITY SEMICONDUCTOR, APPROXIMATION CALCULATION, SEMICONDUCTOR BAND STRUCTURE, GYROSCOPE MOTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0980 STEP NO--UR/0449/70/004/000/0461/0465

CIRC ACCESSION NO--AP0115001

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0115001 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCULATION OF THE INTERBAND FARADAY EFFECT IN STRONGLY DOPED SEMICONDUCTORS, IN QUASI CLASSICAL APPROXIMATION. IT IS SHOWN THAT IN THE CASE OF DONOR IMPURITIES, STRONG NEGATIVE ROTATION CAN OCCUR IN DEGENERATE SAMPLES IN WHICH THE SUM OF THE GYROMAGNETIC FACTORS IN THE CONDUCTION AND VALENCE BANDS IN ROUGHLY ZERO. FACILITY: AKADEMIIA NAUK GRUZINSKOI SSR, INSTITUT KIBERNETIKI, TIFLIS, GEORGIAN SSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR

UDC 51:621.391

TSITSURIYA, I. YE. and CHUBINISHVILI, T. N.

"On a Problem of Supply Management"

V sb. Issled. nekotor, vopr. mat. kibernet. (Studies of Some Questions of Mathematical Cybernetics--collection of works), Tbilisi, Tbilisi University, 1973, pp 39 - 42 (abstract in Georgian) (from RZh Matematika, No 11, Nov 73, abstract No 11 V699)

Translation: This article considers a single-product, n-period model of supply management with a determinant varying demand. The order to replenish supplies is given at a moment in time t = 0 and arrives at the end of the kth period with a probability of p and with a probability of 1-p at the end of the $(k+1)^{th}$ period (k is less than n). Unsatisfied demand is delayed until supplies are replenished.

Abstract from the author's introduction.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

USSR UDC 621.371

ISHKIN, V. Kh., TSITVER, I. I.

"Organization of Radio Communications in Power Systems in the Meter Range of Microwaves"

Vopr. ekspluat. ustroystv svyazi i telemekhan. v energosistemakh (Problems of Operational Communications Devices and Telemechanics in Power Systems -- Collection of Works), vyp. 10, Moscow, Energiya Press, 1970, pp 82-97 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A278)

Translation: A procedure is presented for calculating radio channels organized in regions with weakly broken and moderate terrain and in mountain area. Calculations of specific routes performed by the investigated procedure gave good comparison with the MKKR [International Radio Consultative Committee] data and the results of experimental measurements. There are 16 illustrations, one table, and a five-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410001-8

Construction

UDC 624.139.22

USSR

TSIUNCHIK, B. I., NAUMOV, N. YA., Novosibirsk

"The Deformation of a Large-Span Industrial Building in Connection With Frost-Actuated Heaving of the Foundation Soil"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 6, 1970, pp 28-30

Abstract: In planning practice it sometimes considered that if building foundations are laid below the frost line, deformations from frost heaving will occur only in comparatively small buildings. However, experience shows that the heaving properties of soils freezing at building foundations also cannot be disregarded in the case of industrial buildings, without danger of incurring severe consequences. One such instance is discussed in the article. The conclusion is drawn that calculation checks of foundation stability against frost heaving must be made if a building is to be erected on soil subject to heaving, even if the thickness of this soil is small. 2 figures.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INFRARED ABSORPTION SPECTRA OF TRITHIOCYANATOCADMATES -U-

AUTHOR-(03)-KHARITONOV, YU.YA., TSINTSADZE, G.V., TSIVADZE, A.YU.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 949-53

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR ABSORPTION SPECTRUM, AMMONIUM COMPOUND, CADMIUM COMPOUND, CYANATE, CESIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1086 STEP NO--UR/0078/70/015/004/0949/0953

CIRC ACCESSION NO--AP0123079

UNCLASSIFIED

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2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123079

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF SOLID AND AQ. SOLNS. OF MCD(SCN) SUB3 .XH SUB2 O (WHERE M EQUALS NA, K, CS, NH SUB4, C(NH SUB2) SUB3, AND ONE HALF BA AND WHERE X EQUALS 0-4) ARE GIVEN AND THE ASSIGNMENT OF THEIR BANDS IS TABULATED. WITH THE EXCEPTION OF SPECTRA OF CS SALTS WHICH SHOWED TERMINAL SCN ONLY, ALL THE REMAINING SPECTRA OF SOLID SALTS PROVED THE PRESENCE OF BRIDGED ALONG WITH TERMINAL SCN GROUPS. IN SOLNS. THE BRIDGE IS HYDROLYZED.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM, KURNAKOVA, MOSCOW, USSR.

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