"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 019

UNCLASSIFIED

CIRC ACCESSION NO--AP0139446 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF PUBLISHED STUDIED CONCERNING THE MECHANISM OF THERMAL DECOMPOSITION OF OXIDIZERS CONTAINING SALTS OF PERCHLORIC AND SULFURIC ACIDS. IT IS POINTED OUT THAT THE MARKEDLY DIFFERENT REACTIVITIES OF AMMONIUM SALTS ON THE ONE HAND AND ALKALI AND ALKALI EARTH SALTS ON THE OTHER CANNOT BE ACCOUNTED FOR BY ELECTRON TRANSFERS ALONE. IT IS CONTENDED, RATHER, THAT THE STRENGTH AND STABILITY OF THE ACID, THE STRENGTH OF THE BASE, AND THE CONCENTRATION OF DISLOCATIONS AND THE PATTERN OF THEIR MULTIPLICATION DETERMINE THE REACTIVITY OF AMMONIUM AND HYDRAZONE SALTS. IT IS ALSO INDICATED THAT THE BIMOLECULAR REACTIONS OF ANIONS MAY PLAY A SUBSTANTIAL PART IN THE REACTIVITY OF ALKALI AND ALKALI EARTH SALTS.

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S

Explosives and Explosions

USSR UDC: 541.427.6:126

FOGEL'ZANG, A. YE., and SVETLOV, B. S., Moscow Institute of Chemical Technology imeni D. I. Mendeleyev, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Relationship Between the Structure of Explosives and Their Combustion Rate"

Moscow, Doklady Akad. Nauk SSSR, Vol 192, No 6, Jun 70, pp 1322-1325

Abstract: Combustion of perchlorates and nitrates of aliphatic and aromatic mono- and polyamines was studied. It was shown that changing the reactivity of the oxygen containing group, the rest of the molecule being kept the same, changes the combustion rate by an order of magnitude or more, while changes in the structure of organic molecule portion exhibit a much lesser effect. For example, comparison of secondary explosives and of ballistic and pyroxylin powders with NO_2 group as the oxidizing agent showed that the combustion rate varied in the range of 3-4 times, and only when a transition was made to the perchlorates, which are quite similar by their stability and energetic characteristics to secondary explosives, an increase in the combustion rate of an order of magnitude and more was obtained.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC: 678.01:677.52+539.4

ZHIGACH, A. F., TSIRLIN, A. M., SHCHETILINA, YE. A., SVETLOV, I. I., 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: 08/09/2001 CIA-RDP86-00513R002203220010-9

Acc. Nr: AP0048484

Abstracting Service: CHEMICAL ABST. 5/70

Ref. Code: UR0070

104779p Dislocation structure arising in threadlike sapphire crystals during deformation under concentrated loading. Bulygina, T. J.; Nazarova, M. P.; Svetlov, I. L. (USSR). *Kristallografiya* 1970, 15(1), 98–102 (Russ). Crystals obtained as a result of the high-temp. oxidn. of Al powder or $TiAl_3$ in a flux of humid H were investigated. The crystals, in the form of optically transparent plates (20–30 μ thick, 100–200 μ wide, 3–5 mm long) were subject to indentation under a load of 20 g over 5–10 sec, followed by heating in a H–O flame at >1000°. The effect of deformation was detd. by etching the samples in H_3PO_4 at 320°. Under these conditions the prismatic loops of dislocation shifted according to their Burgers vectors. The results obtained showed a similarity in the behavior of sapphire and brittle semiconductors, which may be explained by the action of a similar mechanism of plastic deformation at room temp. J. Pabis-Machej

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 669.25:669.017.3

BOKSHTEYN, S. Z., LYUTTSAU, V. G., RAZUMOVSKIY, I. M., SVETLOV, I. L., and FISHMAN, Yu. M., All-Union Scientific Research Institute of Aviation Materials

"Martensitic Transformation in Cobalt Whiskers"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1277-1284

Abstract: An x-ray investigation was made of the phase composition and dislocation structure of cobalt whiskers grown by $CoBr_2$ reduction at 720-760°C. The structures of whiskers in which an incomplete martensitic transformation occurred and the structures of whiskers with mixed phase composition are imperfect. Dislocations with the Burger vector b=1/3<.111> lying in planes parallel to the habitus plane in transformation were found in crystals of these whiskers. In whiskers with a mixed phase composition, the dislocations are concentrated in regions retaining the high-temperature modification with a centered cubic structure. Obviously, martensitic transformations can occur in ideal crystals, but structural defects prevent the transformation development according to the martensitic mechanism. Three figures, fourteen bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--APPLICATION OF ELECTRIC SOUPLED STIMULATION TO IMPROVE THE EFFICACY OF CERTAIN METHODS OF SYNCHRONOUS AUXILIARY CIRCULATION -U-

AUTHOR-(04)-SHUMAKOV, V.I., KUVAYEV, A.YE., TOLPEKIN, V.YE., SVETLOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970, VOL 14, NR 2, PP 83-88

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART RATE, BLOOD CIRCULATION, HEART STIMULATOR, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0033 STEP NO--UR/0396/70/014/002/0083/0088

CIRC ACCESSION NO--AP0105132

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0105132 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS SHOWN IN EXPERIMENTS ON 40 DOGS THAT APPLICATION OF COUPLED STIMULATION IN USING OF SOME METHODS OF SUXILIARY CIRCULATION (BY PASS SHUNTING OF THE LEFT CARDIAC VENRICLE AND COUNTERPULSATION) IN CASES OF MARKED TACHYCARDIA AND SOME TYPES OF ARRHYTHMIA, CONSIDERABLY INCREASED THE EFFICACY OF THESE METHODS.

FACILITY: LABORATORIYA ISKUSSTVENNOYE SERDTSE I KLAPANNYYE PROTEZY NAUCHNO ISSLEDOVATEL'SKOGO INSTITUTA KLINICHESKOY I ESKPERIMENTAL'NOY KHIRURGII MINISTERSTVA ZDRAVO OKHRANENIYA SSSR, MOSCOW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 621.892.8:669(088.8)(47+57)

LIVANOV, V. A., KOSTYUK, V. K., BASOVA, I. G., KULIKOV, A. F., SVETLOV, V. T., KRASOVSKAYA, T. A., and TRUNINA, S. I.

"Lubricant-Cooling Liquid for Hot Working of Metals"

USSR Author's Certificate No 226768, filed 5/06/66, published 17/01/69, (from Referativnyy Zhurnal Khimiya, No 3, Vol 2, 10 Feb 70, Abstract No 3 P260 P)

Translation: In order to increase the effectiveness of a lubricating cooling fluid for hot working of metals, based on water or aqueous emulsions of petroleum oil, polyorganosiloxane liquid and an emulsifier such as solvar were added. The liquid includes 0.01-0.05 polyorganosilicone liquid, 0.0004-0.002 solvar and up to 100% water or aqueous emulsion of petroleum oil.

A. A. N.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 022

UNCLASSIFIED

TITLE--INFLUENCE OF EXTERNAL ELECTRIC FIELD ON QUADRUPOLE SPIN ECHO -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-SVETLOV, YU.G., AINBINDER, N.E.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 15-18 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR RESONANCE, QUADRUPOLE MOMENT, ELECTRIC FIELD, FREQUENCY SHIFTING, PERIODIC PULSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1794

STEP NO--US/0000/70/011/001/0015/0018

CIRC ACCESSION NO--AP0133699

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 022

UNCLASSIFIED

CIRC ACCESSION NO--AP0133699 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OBSERVATIONS WERE CARRIED OUT USING A PULSED FIELD TECHNIQUE WHICH MADE THE INTERPRETATION OF THE RESULTS SIMPLER. THIS TECHNIQUE OBVIATED THE NECESSITY TO OBTAIN EXACT MEASUREMENTS OF ABSOLUTE NQR FREQUENCIES. ALSO, FREQUENCY SHIFTS WOULD BE MEASURED IN WEAK FIELDS.

FACILITY: PERM' STATE UNIV. USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

TITLE--EFFECT OF AN EXTERNAL ELECTRIC FIELD ON QUADRUPOLE SPIN ECHO -U-

PROCESSING DATE--11SEP70

AUTHOR--AYNBINDER, N.YE., SVETLOV, YU.G.

S

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 15-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ELECTRIC FIELD EFFECT, CHLORINE, CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, NUCLEAR RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1264

STEP NO--UR/0386/70/011/001/0015/0018

CIRC ACCESSION NO--AP0055935

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

272 010

CIRC ACCESSION NO--AP0055935 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF AN EXTERNAL ELEC. FIELD ON THE QUADRUPOLE SPIN ECHO OF PR6ME35 CL IN POLYCRYST. CCL SUB4, CHCL SUB3, C SUB2 CL SUB6, C SUB2 H SUB4 CL SUB2, PHCL, AND CL SUB2 AT 77DEGREESK WAS STUDIED. THE VALUES OF THE SHIFTS OF THE NUCLEAR QUADRUPOLE RESONANCE (NQR) FREQUENCY OF PRIME35 CL CAUSED BY THE EXTERNAL ELEC. FIELD AND THE COMPONENTS OF THE ELEC. FIELD TENSOR EFFECT (3RD ORDER) AGREED WELL WITH THOSE ESTD. BY USING THE STATIONARY METHOD. THE SPIN ECHO METHOD ALLOWS THE MEASUREMENT OF THE FREQUENCY SHIFTS IN THE CASE OF WEAK ELEC. FIELDS; THERE IS NO NEED TO KNOW TH ABS. NQR FREQUENCY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 615.371:576.858.13

MATSEVICH, G. R., and SVET-MOLDAVSKAYA, I. A., Moscow Scientific Institute of Virus Preparations

"Smallpox Vaccine Inactivated With Gamma-Rays, and Its Antigenic and Immunogenic Properties"

Moscow, Voprosy Virusologii, No 3, May/Jun 70, pp 316-322

Abstract: To prevent infrequent but rather serious postvaccinal complications vaccin virus was inactivated with heat, phenol, alcohol. But inactivation by these methods was of little value: it lowered the antigenic and immunogenic properties of the vaccine. Even inactivation of vaccinal virus with formalin, the commonly used method, lowers the efficiency of the vaccine.

Vaccinal virus was inactivated with gamma-rays in various strengths. Irradiation with 1.75 Mrad was best when inactivated specimens were compared with live vaccine in animal experiments, the antigenic and immunogenic properties were found to be well preserved; the virus was inactivated, and the toxic properties of the vaccine reduced.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 033 UNCLASSIFIED

TITLE--SMALLPOX VACCINE INACTIVATED WITH GAMMA RAYS, ITS ANTIGENIC AND IMMUNOGENIC PROPERTIES -U- PROCESSING DATE--30OCT70

AUTHOR-(02)-MATSEVICH, G.R., SVETMOLDAVSKAYA, I.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 316-322

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALLPOX, VACCINE, GAMMA RADIATION, RADIATION EFFECT, COBALT ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1846 STEP NO--UR/0402/70/000/003/0316/0322

CIRC ACCESSION NO--AP0125457

UNCLASSIFIED

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2/2 033

CIRC ACCESSICN NO--AP0125457 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILTIY OF PREPARING CO PRIME06 GAMMA RAYS INACTIVATED LYOPHILIZED STERILLE SMALLPOX VACCINE WITH SUFFICIENTLY HIGH ANTIGENIC AND IMMUNOGENIC PROPERTIES. THE PREPARATION IRRADIATED WITH A MINIMAL INACTIVATING DOSE OF GAMMA RAYS POSSESSES OPTIMAL PROPERTIES. FACILITY: MOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT VIRUSNYKH PREPARATOV.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

TITLE--A METHOD FOR DETERMINATION OF SMALLPOX VACCINE IMMUNOGENICITY IN WHITE MICE -U-

PROCESSING DATE--18SEP70

AUTHOR-(03)-CHIMISHKYAN, K.L., SVETMOLDAVSKAYA, I.A., MATSEVICH, G.R.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 244-246

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALLPOX, VACCINE, WHITE MOUSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0742

STEP NO--UR/0402/70/000/002/0244/0246

CIRC ACCESSION NO--AP0108948

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 016

UNCLASSIFIED

CIRC ACCESSION NO--AP0108948 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF USING THE SO CALLED "VACCINATION DISEASE" IN IRRADIATED WHITE MICE FOR DETERMINATION OF IMMUNOGENICITY OF SMALLPOX VACCINES. BY THIS METHOD, DIFFERENCES IN IMMUNOGENICITY OF VACCINES PREPARED FROM DIFFERENT STRAINS COULD BE DETECTED. THE METHOD MAY BE USED AS AN ADDITIONAL CRITERION FOR EVALUATION OF IMMUNOGENICITY OF SMALLPOX VACCINE.

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Organ and Tissue Transplantation

USSR

UDC 612.6.054.017.4

SVET-MOLDAVSKIY, G. Ya., SHAGIYAN, G. Sh., MKHEIDZE, D. M., LITOVCHENKO, T. A., OZERETSKOVSKAYA, N. N., KADAGIDZE, Z. G., and CHERNYAKHOVSKAYA, I. Yu., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Moscow (Presented by Academician V. V. Parin)

"Inhibition of Transplantation Immunity in Mice Infected With Trichinella spiralis"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 4, Feb 70, pp 999-1000

Abstract: In this study the authors attempted to get experimental support for the theory proposed by Svet-Moldavskiy that helminths produce substances which drastically inhibit the immunity of the host. Experiments were based on skin transplants. It was determined that in mice infected with Trichinella spiralis, the allogenic skin transplant survived much longer, and the detachment of necrotic sections occurred much later than in controls.

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USSR

UDC 612.6.054.017.4

CHERNYAKHOVSKAYA, I. Yu., SHAGIYAN, F. Sh., and SVET-MOLDAVSKIY, G. Ya.,
Virology Laboratory, Institute of Experimental and Clinical Oncology, USSR Academy of Medical Sciences

"Correlation Between the Degree of Trichinella spiralis Invasion of Mice and Suppression of Transplantation Immunity"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,490-1,492

Abstract: This investigation was performed in support of our previously expressed view that certain parasitic helminths produce substances which suppress the host's immunological reactions and thus facilitate their own survival. Skin grafts were transplanted from healthy mice onto mice invaded with Trichinella spiralis (experimental group) and onto healthy mice (control group). The survival time of the grafts was determined; after completion of observation, the recipients were sacrificed and the concentration of trichina per 1 gram body weight was determined. In the control group, necrosis of the grafts began on about the 10th day, full necrosis was reached on the 13th day, and healing occurred on the 19th day on the average. In the experimental

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USSR

CHERNYAKHOVSKAYA, I. Yu., et al., Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,490-1,492

group, the corresponding periods were 15, 18 and 24 days. The large individual variations in the experimental group showed a good correlation with trichina concentration: the greater the latter the more delayed were the reaction periods. Thus, the results indicate that the presence of Trichinella spiralis suppresses the rejection of skin grafts in direct proportion to the degree of invasion but does not completely inhibit immunoreactivity of the host. The mechanism of the suppression is not yet clear. It may well be that the immunological effectiveness of lymphocytes is diminished by certain substances produced by Trichinella spiralis.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

VIROLOGY

SO: JPRS 54153
29 SEP 71

UDC: 616.5-092.9-097.5-022.6

SOME OF THE RESULTS OF A STUDY OF DERMAL HETEROGENIZATION INDUCED BY A LATENT VIRUS OF C57Bl/6J MICE

[Article by A.L. Liozner, G.Ya. Svet-Moldavskiy, D.M. Mkhcidze, P.P. Sokolov, T.A. Litovchenko, A.F. Bykovskiy, Moscow Scientific Research Institute of Viral Preparations, USSR Ministry of Health; Institute of Experimental and Clinical Oncology USSR AMS [Academy of Medical Sciences]; Institute of Sanitation and Hygiene, Georgian Ministry of Health; Institute of Epidemiology and Microbiology imeni N.F. Gamaleya, USSR AMS; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 7, 1971, pp 74-81]

In 1965, in our experiments with sarcoma K-237, induced in inbred C57Bl/6J mice with the chemical carcinogen DMBA, we discovered the unusual phenomenon of tissular incompatibility. Skin transplants from mice with tumors to recipients of the same line consistently underwent rejection just as is the case with skin transplants of allogenic origin from another inbred line of mice (G.Ya. Svet-Moldavskiy et al., 1967a, b, c). Further investigation of this phenomenon, which was named "skin heterogenization," established that its onset is linked with the effect of a distinctive virus associated with sarcoma K-237 (G.Ya. Svet-Moldavskiy et al., 1968a, b). These investigations define two directions of research which have been developed in recent times by a number of authors in many laboratories the world over: 1) investigation of appearance of new antigens in normal tissues of tumor carriers and, as a more general question, investigation of antigen exchange between cell systems in the organism and in vitro; 2) investigation of viral heterogenization of normal cells and the role of such phenomena in pathology, in particular with reference to immunopathological status. Thus, investigation of this problem is timely both for general immunology and for such directions in it as transplantation and antitumor immunity. In this report we should like to sum up some of the results of investigation of skin heterogenization on the example of the experimental model we have described, and to discuss the present status of the problem as a whole. Like any new problem, this one presents a number of debatable aspects which are also going to be discussed.

Material and methods. The experiments were conducted on inbred C57Bl/6J, BA1B/C, CBA, C3H, C3HA, T6T6 mice which were obtained from the Stolbovaya Nursery of the USSR AMS. Hybrids from crosses between C57Bl/6J and BALB/c mice were obtained in our animal shelter. To induce tumors, we gave the

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mice intramuscular injections of 7,12-dimethylbenzanthracene (DMBA) in sterile oil solution, in a dosage of 0.5 mg. Tumors developed at the site of injection of the carcinogen within 3-5 months. They were transferred to syngenic mice by means of subcutaneous implantation of small pieces. The method of preparing virus-containing acellular tumor extracts and of testing them on mice was described previously (G.Ya. Svet-Moldavskiy et al., 1966a, b, 1970).

Skin transplants were transferred following a slight modification of the method of Billingham and Medawar (1951). Body skin transplants, including all layers, 3.5×2 or 2×2 cm in size were applied to recipients by means of an adhesive strip along the margins of the transplant and site. For this purpose we used a special preparation of BF-6 adhesive (adhesive for microtraumas). The first evaluation of the transplanted skin was made on the 5th-6th day after transplantation; primary acceptance of any type of transplant normally occurred within this time. At this time we rejected all recipients showing signs of injury or infection of the transplants. The percentage of such rejects ranged from zero to ten in the different experiments. In order to ascertain the time of transplant rejection, they were examined daily. The final criterion of acceptance or rejection was the presence or absence of hair growth, which was in the opposite direction from growth on the recipient's back because the graft was twisted at the time of transplantation.

Chief phenomenon and etiological agent. The reaction of rejection of skin grafted to syngenic C57Bl/6J recipients from carriers of sarcoma R-237 was identical to the reaction of rejection of allogenic transplants (of skin from BALB/c mice to C57Bl/6J recipients). Both, as well as normal syngenic transplants, showed vascularization by the 6th day and were accepted. Development of rejection occurred between the 8th and 11th experimental day (Table 1). Histological examination of the transplants also revealed complete similarity of rejection of syngenic heterogenized and allogenic skin. In both instances (Figures 1-4), on the tenth day the reaction was characterized by marked dilatation of vessels and arrested circulation. There was mixed cellular infiltration of the transplants, and this is quite typical precisely for the rejection reaction in mice (Brent, 1958). In addition to mononuclears, there was a considerable number of polymorphonuclear leukocytes in the transplant. There were also marked signs of activation of connective tissue in the transplant derma and adhesion layer. The agent "responsible" for development of heterogenization of the skin presented properties that were typical for viruses. It could be separated from tumor cells, it remained in acellular extracts of the tumor, ultracentrifugates, and ultrafiltrates (for more details see G.Ya. Svet-Moldavskiy et al., 1970). Table 2 gives the summary data on the heterogenizing effect of the tumor and of extracts thereof. As seen in Table 2, in almost 1,000 cases of transplantation, there was heterogenization of the skin by the tumor or virus-containing extract, whereas in the control (provided accurate consideration of primary healing of the grafts was made) no rejections were observed. It has been shown (D.M. Mkheidze et al., 1970; G.Ya. Svet-Moldavskiy et al., 1970) that skin heterogenization occurs both after infection with tumor extract and after transplantation of heterogenized skin. In the latter event, the phenomenon developed after each successive transplantation for 15 passages, starting in 1966. Thus, the viral nature of the agent is confirmed by the fact that it can be separated from cells, it

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UDC 631.547.04+634.836.73

USSR

NATAL'INA, O. B., SVETOV, V. G., and GETALENKO, G. G., Kuban' Agricultur l Institute

"Aftereffect of Chlorocholine Chloride on Grape Plants"

Moscow, Khimiya, v Sel'skom Khozyaystve, Vol 10, No 9, (119), 1973, pp 59-61

Abstract: The growth of grape vines is inhibited as late as two years after the application of chlorocholine chloride [CCC]. Depending on the concentration of the solution and the frequency of application, the increase in vine growth dropped by 15-30%. This however did not depress formation and development of grape racemes: on the second year after application of CCC it was 20-46% higher than on the controls and on the third year after application — 18-27% higher. The actual yield of the grape was 10-60% higher, accompanied by a lower incidence of rot.

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NATAL'INA, O. B., and SVETOV, V. G., Khimiya v Sel'skom Khozyaystve, Vol 10, No 9(107), 1972, pp 34-36

eventual harvest. The highest yield came from grapes which had had two applications of 1.5% CCC.

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USSR

UDC [621.357.5.035.4.:621.79.027]:669

KHRISTO, MITIKOV AND SVETOZAR, KOLEV

"Flotation Method for the Removal of Residues From Electrolytes Used in the Electrochemical Treatment of Metals"

Mashinostroyene (Machine Construction), 21, No 8, 1972, pp 351-352 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L349 by A. D. Davydov)

Translation: A study was carried out on a process, using the flotation principle, for purifying electrolytes (10% solution of NaCl) during the electrochemical sizing treatment. The flotation system is described. The effectiveness of the purification using different PAV [expansion unknown]. The optimum concentration of selected PAV was determined. (Composition of the PAV was not given).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ROLE OF VARIOUS SPIN LATTICE RELAXATION PROCESSES IN THE FORMATION OF THE HYPERFINE STRUCTURE OF A MOESSBAUER LINE -U-

AUTHOR--SVETOZAROV, V.V.

S

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970 12(4), 1054-63

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPIN LATTICE RELAXATION, HYPERFINE STRUCTURE, PHONON SCATTERING, CORRELATION FUNCTION, PERTURBATION THEORY, CRYSTAL STRUCTURE, SECOND ORDER PHASE TRANSITION, LOW TEMPERATURE EFFECT, IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1304 STEP NO--UR/0181/70/012/004/1054/1063

CIRC ACCESSION NO--AP0124955

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124955

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE AID OF THE DIAGRAM METHOD 1 AND 2 PHONON PROCESSES OF RELAXATION WERE CONSIDERED. AFTER SEPN. OF THE DIAGRAMS WHICH GIVE A CONSIDERABLE CONTRIBUTION INTO THE CORRELATION FUNCTION, WHICH DET. THE FORM OF THE SPECTRUM, IT IS POSSIBLE TO SUM UP THE PERTURBATION THEORY SERIES. TWO PHONON PROCESSES OF RELAXATION DESCRIBED BY THE 2ND ORDER OF THE THEORY OF PERTURBATIONS ARE ESSENTIAL ONLY IN SUBSTANCES WITH LARGE SPLITTING OF THE LEVELS IN THE CRYSTAL FIELD AND AT VERY LOW TEMP. (A FEW DEGREESK). IN OTHER CASES 1 AND 2 PHONON PROCESSES PREVAIL AS DESCRIBED BY THE 1ST ORDER OF THE THEORY OF PERTURBATIONS. THIS ALLOWS OBTAINING SIMPLE RATIOS BETWEEN BROADENING OF VARIOUS LINES OF THE HYPERFINE STRUCTURE AND ALLOWS SIMPLIFYING THE OBTAINED INFORMATION ABOUT SPIN LATTICE RELAXATION FROM THE MOESSBAUER SPECTRA. AS A CONCRETE EXAMPLE, BROADENING WAS CONSIDERED OF THE LINES OF HYPERFINE STRUCTURE OF PARAMAGNETIC FE ION WITH THE SPIN S EQUALS 5 OVER 2 IN A CRYSTAL FIELD OF ARBITRARY SYMMETRY. FACILITY: MOSK. INZH.-FIZ. INST., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CALCULATION OF THE FLUIDIZED BED LEACHING OF ZINC SINTERS WITH CONSIDERATION OF MIXING OF THE SOLID PHASE -U-

AUTHOR-(03)-KORSUNSKIY, V.I., DYACHKO, A.G., SVETOZAROVA, G.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(5), 21-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MATHEMATIC EXPRESSION, FLUIDIZED BED, ZINC, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1919 STEP NO--UR/0136/70/043/005/0021/0026

CIRC ACCESSION NO--AP0132181

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 013 UNCLASSIFIED

CIRC ACCESSION NO--AP0132181 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL DISCUSSION IS CARRIED OUT ON THE RATE OF LEACHING OF SOLIDS (WITH BOTH NEUTRAL AND ACID LIQS.) DEPENDING ON THE RATE OF LIQ. FLOW, DIAM. OF THE PARTICLES, CONCN. OF ACID, ETC. THE NEUTRAL AND ACID LEACHING OF ZN SINTERS IS DISCUSSED AS AN EXAMPLE, AND THE CONCLUSION IS MADE THAT CHARGING OF THE ZN SINTER PULP FROM THE BOTTOM INTO THE FLUIDIZED BED IS MORE EFFICIENT. AN INCREASE IN ZN EXTN. CAN BE OBTAINED EITHER BY INCREASING THE RESIDENCE TIME OF ZN SINTER PARTICLES IN THE FLUIDIZED BED (AND THUS REDUCING THE PRODUCTIVITY) OR BY INCREASING THE VOL. OF THE BED.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--COPOLYMERS STUDIED FROM GELATION CURVES -U-

AUTHOR-(05)-PETERBURGSKAYA, L.D., BALAKIRSKAYA, V.L., KRONMAN, A.G., SVETOZARSKIY, S.V., KOCHNEVA, N.N.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 9-11

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--COPOLYMER, GELATION, PLASTICIZER, POLYVINYL CHLORIDE, ACRYLATE, PHTHALATE, LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1823 STEP NO--UR/0191/70/000/003/0009/0011

CIRC ACCESSION NO--AP0112807

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GELATION CURVES MAY BE USED TO DET. CONTENT AND HOMOGENEITY OF SIMILARLY PREPD. COPOLYMERS BY DETG. TEMP. BEHAVIOR IN PLASTICIZERS. GELATION CURVES FOR POLY(VINYL CHLORIDE) (I) AND ME ACRYLATE (II) VINYL CHLORIDE (III) COPOLYMERS (IV), PREPD. BY (NH SUB4) SUB2 S SUB2 O SUB8 CATALYZED EMULSION POLYMN., IN BU BENZYL PHTHALATE PLASTICIZER DIFFERED WITH CONTENT OF II. THE TEMPS. OF SWELLING AND OF SOLN. DECREASED LINEARLY WITH INCREASE IN COMONOMER (II OR VINYL ACETATE (V)) CONTENT SO THAT COMPNS. OF NEW COPOLYMERS CAN BE DETD. FROM SUCH CURVES. A MIXT. (A) OF I WITH IV SHOWED THE CHARACTERISTIC VISCOSITY MAX. OF IV AND I AND THE GELATION CURVE OF A WAS BROADER THAN THAT OF I. GELATION CURVES OF III-V COPOLYMERS PREPD. BY 3 DIFFERENT METHODS (DISPERSION, LATEX, AND SOLN. POLYMN.) DIFFERED BY SWELLING TEMPS. AND SOLN. TEMPS. AND IN WIDTH (DISTANCE FROM EACH OTHER).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 621.43.011:533+621.5.533

SVETS, A. I., ISAYEV, S. P.

"Annular Jet in a Satellite Flow"

Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey" (Works of the II Republic Conference on Aerohydromechanics, Heat Exchange and Mass Exchange. "High-Speed Aerodynamics" Section), Kiev, Kiev University, 1971, pp 160-164 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B376)

Translation: The results of experimental studies of a flow behind a cylindrical model when there is a supersonic annular jet flowing into a submerged space and into a satellite flow in a range beyond calculation p_a/p_∞ = 0.1-15, where p_a is the pressure at the end of the annular nozzle and p_∞ is pressure in the incident flow or in the submerged space. The Mach numbers of the outer flow are $M_\infty \leq 3$ and $M_a \leq 3.8$ at the cutoff of the nozzle. The pressure distribution in the bottom region, the geometrical characteristics of the flow and the spectrum of noises of the annular jet were investigated. It is

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

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SVETS, A. I., ISAYEV, S. P., Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev, Kiev University, 1971, pp 160-164

shown that the relative bottom pressure p_g/p_∞ decreases for flow of the jet into the submerged space in the range p_a/p_∞ = 0.1-0.8 and increases in flow into the satellite current (p_a/p_∞ = 0.1-5). The geometry of the flow of the jet into the submerged space and the satellite current is shown in graphs. Measurements showed that the maximum of the relative value of the intensity of sonic radiation is achieved for p_a/p_∞ = 0.4-0.6, agreeing with similar measurements for axisymmetric jets. It is noted that other discrete tones are present in the spectrum along with the discrete component characteristic of axisymmetric jets. I. N. Murzinov.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 533.06.11

SVETS, A. I.

"Flow in the Base Region of Flat Bodies"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6, Nov-Dec 72, pp 61-70

Abstract: Results are presented of experimental research on the flow structure in the base region of the flat bodies, and consideration is given to the primary parameters that determine the difference in flow behind sharp and blunt bodies. The wind-tunnel tests were conduted within the Mach range of 0.3 to 3.8. The Reynolds numbers, referring to 0.1 m and calcualted on the basis of the mainstream parameters, varied from 2×10^6 to 3×10^6. An investigation was made of flow behind a wedge (with a vertex angle of 45° and a height of 0.026 m), mounted on a plate 0.2 m wide and 0.4 m long. A study was made of near wake flow: behind wedges with half-angles $\theta = 15$, 20, and 30°, a width of 0.2 m, and with the rear cutoff 0.05 m high, and behind a cylinder of the same width, 0.05 m in diameter. 6 figures, 17 references.

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USSR UDC 621.791.048

KUSHNEREV, D. M., and SVETSINSKIY, V. G.

"ANK-30 Ceramic Flux for Welding Metal Structures from Carbon and Low-Alloy Steels Under Northern Conditions"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 68-69

Abstract: Northern conditions place great demands on the mechanical properties of welded structures, especially as regards the impact toughness of the weld metal. The Institute of Electric Welding imeni Ye. O. Paton has developed the ANK-30 ceramic flux which in combination with suitable manganese and silocomanganese filler wire, increases the cold brittleness of the weld metal. The flux is based on a $MgO-CaO-Al_2O_3-SiO_2-CaF_2$ slag system with a high content of basic oxides and small additions of iron, manganese, and calcium carbonates to produce oxidising conditions in the atmosphere of the arc. Metallic aluminum and ferrosilicon at a maximum of 3% serve as deoxidizers. Laboratory tests showed that joints welded under the ANK-30 flux exhibited high resistance to pore and

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KUSHNEREV, D. M., and SVERSINSKIY, V. G., Avtomaticheskaya Svarka, No 11, Nov 70, pp 68-69

crack formation. The critical amount of rust necessary to cause pores for the ANK-30 flux is about three times that for AN-348-A flux. As for the resistance of welds to hot cracking, ANK-30 flux was found superior to AN-348-A. ANK-30 flux was also successfully tested under production conditions in welding bridge spans (10KhSND steel) for the Khimkin Bridge in Moscow.

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USSR

UDC [illegible]

KAZAKOV, V. G., [illegible], V. A., SHISHKOV, A. G., and [illegible]
Pedagogical Institute; Moscow State University imeni M. V. Lomonosov

"Influence of Elastic Stresses on Slipping at Interdomain Boundaries in Iron-Nickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 2, Aug 70, pp [illegible]

Abstract: The slipping rate is studied at interdomain boundaries in iron-nickel films as a function of the elastic stresses applied. It is established that stresses resulting in an increase in H_L of the films lead to a shift in the curves $V(H_L)$ where H_p = const in the area of high values of the H_L fields. Both the curves of equal velocities and the critical curves of the start flow of the boundary correspond in corrected coordinates under all loads.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 669.1:539.216.2

KAZAKOV, V. G., KARABANOVA, V. P., BURAVIKHIN, V. A., SVETSOV, M. M., P'YAVCHUK, N. N., and IVANOV, V. A., Irkutsk State Pedagogical Institute

"Effect of Elastic Stresses on Critical Fields of Thin Ferronickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 864-866

Abstract: A study was made of the behavior of the coercive force H_c of thin magnetic ferronickel films under the action of stresses, since H_c essentially affects the quasi-static and pulsed remagnetization processes. The value of H_c in most cases is determined by the field of starting boundaries. Thus, dependence of H_c boundaries on the magnitude of elastic stresses in 75% Ni and 25% Fe films of different thicknesses (450, 800 and 1100 Å) was experimentally investigated. The results are discussed by reference to diagrams showing the deformation dependence of the starting field of domain boundaries (H_{st}) and the width of the domain boundary. The dependence of H_{st} on the magnitude of applied stresses can be explained by the character of

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KAZAKOV, V. G., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 864-866

structural changes of domain boundaries. Three illustrations, six bibliographic references.

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Adsorption

USSR UDC: 542.8

SVETLSOV, V.I., MAKSINOV, A.I., GUSTERIN, V.P., Ivanovo Chemical Technological Institute, Ivanovo, Ministry of Higher and Secondary Specialized Education RSFSR

"Decay and Absorption of Carbon Monoxide in a Glow Discharge and in a High-Frequency Discharge"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 814-816

Abstract: The authors stidied the decay of carbon monoxide and its absorption by the walls of the discharge tube in a glow discharge and in a high-frequency discharge under various conditions. The absorption of the gas in the discharge determined by the rate of formation of active particles in the volume accompanying electron collisions. The difference in the shape of the absorption curves in high-frequency and glow discharges is due to the contribution of cathode vaporization to absorption in the latter case. The observed relationship between the rate of absorption and the rate of vaporization can be attributed to a physical adsorption process.

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USSR

UDC 547.7'26'118.07

SHUMYATSKAYA, T. N., TYRKINA, T. S., SVETSOVA-SHILOVSKAYA, K. D., and MEL'NIKOV, N. N.

"A Method of Making O,O-Dialkyl S-1-one-2-Substituted Ethyl dithiophosphates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287014, class 12, filed 25 Jun 69, published 19 Nov 70, pp 39-40

Translation: This Author's Certificate introduces: 1. A method of making O,O-dialkyl S-1-one-2-substituted ethyl dithiophosphates. As a distinguishing feature of the patent, O,O-dialkyl S-1-one-2-chloroethyl dithiophosphate is treated with the corresponding heterocyclic compound in the presence of an organic base in an organic solvent with subsequent isolation of the product by conventional methods. 2. A modification of this method is distinguished by the fact that the process is carried out at 30-40°C.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 62-135-253.5:534.08.629.7.03

ZABLOTSKIY, I. Ye., KOROSTELEV, Yu. A., SVIBLOV, L. B.

"Contactless Measurement of Oscillations of Power Blades of Turbines"

Lopatochn. Mashiny i Struyn. Apparaty [Blade Machines and Jet Apparatus -- Collection of Works], No 6, Moscow, Mashinostroyeniye Press, 1972, pp 106-121, (Translated from Referativnyy Zhurnal, Turbostroyeniye, No 8, 1972, Abstract No 8.49.168).

Translation: The principles of the discrete-phase method are presented, allowing measurement of oscillations of the working fluids in an axial compressor to be measured with contactless impulse sensors. A block diagram of a cathode ray device for recording the amplitude of working fluids (ELURA) is presented, and the operating principle of the device is explained. Methods of measurement of the amplitudes of oscillations and amplitudes of oscillation velocities of the ends of blades, phase shift of oscillations of neighboring blades and various methods of measurement of resonant oscillations, the frequencies of which are strict multiples of the rotating frequency of the compressor blade wheel are described. A theoretical foundation is presented for these methods. Examples of measurement of various types of blade oscillations are presented. The advantages of the contactless method of measurement are noted. 10 figures; 10 bibliographical references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 048 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A SUBMILLIMETER RANGE LASER -U-

AUTHOR-(02)-DYUBKO, S.F., SVICH, V.A.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN. FEB. 1970, P. 187-189

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS LASER, HYDROGEN CYANIDE, LASER POWER OUTPUT, SINGLE MODE LASER, SUBMILLIMETER WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1557 STEP NO--UR/0120/70/000/000/0187/0189

CIRC ACCESSION NO--AP0106303

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 048 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106303

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE DESIGN AND MAIN CHARACTERISTICS OF A SUBMILLIMETER RANGE GAS LASER OPERATING ON HCN. THE OUTPUT POWER OF THE LASER AT THE 336 MICRO WAVELENGTH RANGES FROM 10 TO 15 MW. THE RADIATION IS SINGLE MODE AND IS LINEARLY POLARIZED. THE LASER LENGTH IS 1.6 M. FACILITY: KHAR'KOVSKII GOSUDARSTVENNYI UNIVERSITET, KHARKOV, UKRAINIAN SSR.

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JPRS 57492
13 Nov 72

UDC 621.311.25:621.039

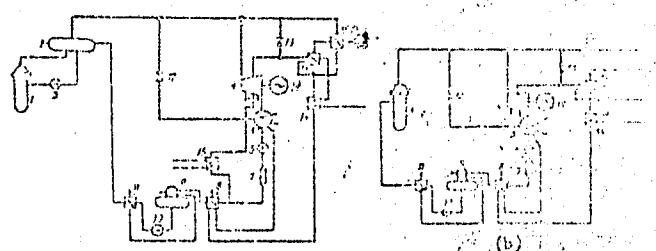
ATOMIC ELECTRIC POWER FOR HEAT SUPPLY

[Article by S. A. Zykov, doctor of technical sciences, A. Ye. Svichar, candidate of engineering sciences, and O. P. Zelenyak and V. P. Kozhilin, engineers: "Application of Atomic Electric-Power Stations for Centralized Heat Supply to Cities and Industrial Complexes"; Kiev, Energetika i Elektrifikatsiya, Russian, No 3, May-June 1972, pp 28-29]

Atomic power plants providing for heat supply to industrial complexes and cities and generation of electric power on a condensation [illegible] for delivery of it to a power system (ATETs) have advantages [illegible] atomic-powered thermal electric-power stations). At an ATETs [illegible] capacity may be applied and the load factor of the reactor [illegible] to the maximum, regardless of the number of hours of use of [illegible] load during the year.

Diagrams of atomic units of such power plants are given in the figure: (a) represents an industrial heating ATETs; (b) and (c) [illegible] industrial ATETs. In the atomic blocks of (a) and (b), [illegible] condensation turbine is installed, with heat-supply [illegible] takeoffs or with a production steam takeoff alone. [illegible]

In block (c) with one reactor, two turbines are installed [illegible] pressure turbine for distribution of industrial steam, and a [illegible] sation turbine for the generation of electric power.



(a) (b)

SVICHAR, A. Ye.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--WASHING OF SUSPENSION POLYMERS IN A ROTOR PULSATION APPARATUS -U-

AUTHOR-(05)-MAYOROV, B.A., GARBUZOVA, G.L., SVICHAR, L.I., DERKO, P.P., NOVICHKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 59-60

DATE PUBLISHED-------70

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

TOPIC TAGS--POLYVINYL ACETAL RESIN, CELLULOSE RESIN, CHEMICAL SUSPENSION, MANUFACTURING METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0579 STEP NO--UR/0191/70/000/003/0059/0060

CIRC ACCESSION NO--AP0119497

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WASHING PROCESS OF POLY(VINYL BUTYRAL) AND ET CELLULOSE IN A ROTOR PULSATION APP. WAS STUDIED ANAL. TO DET. THE OPTIMUM NO. OF WASHING CYLCES UNDER MANUFG. CONDITIONS. THE WASHING WAS EFFICIENT, REQUIRED LESSER AMTS. OF WASHING AGENTS, AND COULD BE USED AS A CONTINUOUS PROCESS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 612.822.3+612.833.81

SVIDERSKAYA, N. YE., Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR

"Unit Responses in the Visual Cortex During Orienting and Conditioned Defensive Reflexes"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 5, 1971, pp 971-978

Abstract: Unit responses in the visual cortex to conditioned stimulation in the early stages of formation of a defensive conditioned reflex were studied in acute experiments on rabbits. The conditioned stimulus was a series of rhythmic light flashes of gradually increasing intensity; square pulses at a frequency of 50 kHz at intervals of 10 or 15 sec served as reinforcement. In the early stages of formation of the defensive conditioned reflex, the same neuron showed signs of activation of both the orienting and conditioned reflexes at the same time. The first consisted of change in the general level of impulses in response to the conditioned stimulus while the second were manifested by latered responses to flashes reinforced by the use of combined stimuli. The changes in the reactions to the conditioned stimuli were related mainly to secondary activation, probably the result of visual afferent impulses being mediated by various cortical and subcortical systems in the process of conditioned analysis. The form in which the conditioned responses were manifested in the neurons of the visual cortex changed as the conditioned reflex was elaborated.

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Materials

USSR

UDC 629.78.002.3

DRITS, M. Ye., SVIDERSKAYA, Z. A., NIKITINA, N. I.

"New Magnesium Alloys for High Temperature Service"

V sb. Splavy tsvet. met. (Alloys of Nonferrous Metals -- Collection of Works), Moscow, "Nauka", 1972, pp 193-197 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.179)

Translation: The mechanical properties of Mg-Sc-Y-Mn alloys in the hot-pressed and the hot-rolled states were investigated at room temperature and at temperatures up to 400°. The effect of heat treatment on the properties of these alloys and the microstructure in the cast and hot-pressed states was also investigated. The strength properties of alloys of the Mg-Sc-Y-Mn considerably exceeds the properties of MA11 and MA12 alloys at temperatures up to 400° and properties of the alloy VMD1 up to 300°. At temperatures of 350-400° the strength properties of Mg-Sc-Y-Mn alloys are close to the strength properties of the VMD1 alloy. 3 ill., 3 tables, 20 ref. Resume.

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Magnesium

USSR

UDC 669.018.29:669.018.672

DRITS, M. Ye., SVIDERSKAYA, Z. A., YELKIN, F. M., and TROKHOVA, V. F.

Sverkhlegkiye Konstruktsionnyye Splavy (Superlight Structural Alloys), Moscow, Izdatel'stvo "Nauka," 1972, 145 pp

Translation of Annotation: This monograph summarizes experimental studies on the structure and properties of magnesium-lithium alloys carried out in the Soviet Union and elsewhere. Systematized data are presented on the nature of the reaction of magnesium with lithium and other elements, as well as the dependence of properties of Mg-Li alloys on their composition, structure, and treatment. Information on the application of superlight alloys in various new branches of technology is also presented.

This monograph is intended for scientists and engineers at scientific research institutes, planning organization, and industrial design institutions dealing with the development, production, and application of light alloys. It may also be useful to teachers and students at higher educational institutions specializing in the metallurgy of light metals.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

DRITS, M. Ye., et al., Sverkhlegkiye Konstruktsionnyye Splavy, Moscow, Izdatel'stvo "Nauka," 1972, 145 pp

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

Magnesium

USSR

UDC 669.721:5'884:539.43

DRITS, M. YE., SVIDERSKAYA, Z. A., TROKHOVA, V. F.

"Ultralight Magnesium-Lithium Alloys Based on the Two-Phase $\alpha + \beta$ Domain"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys — collection of works), Moscow, Nauka Press, 1971, pp 118-122 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I655)

Translation: The properties of two ultralight Mg-Li alloys with $\alpha + \beta$ structure are defined: 1) 7.0-9.0% Li, 4.0-6.0% Al, 2.0-4.0% Sn, 0.8-2.0% Zn, 0.15-0.5% Mn, and the rest Mg; 2) 7.0-10.0% Li, 4.0-6.0% Al, 3.0-5.0% Cd, 0.8-2.0% Zn, 0.15-0.5% Mn, and the rest Mg. With respect to strength characteristics both alloys are somewhat inferior to the Mg-Li alloys based on the α-phase, but they are significantly superior to the richer Li alloys based on the β-phase. With respect to plasticity, the alloys with $\alpha + \beta$ structure also occupy an intermediate position between the two indicated groups of alloys. The mechanical properties of the indicated alloys (σ_B 24-27 kg/mm^2, $\sigma_{0.2}$ 15-22 kg/mm^2) are quite stable. At 100°, σ_B and $\sigma_{0.2}$ were the same or even somewhat higher than for the Mg-Li alloys based on the β-phase at room temperature; σ_{100}^{100} is 5-5.5 kg/mm^2. The data on the strength characteristic and the stress-rupture strength indicate

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USSR

DRITS, M. YE., et al., Struktura i svoystva legk. splavov, Moscow, Nauka Press, 1971, pp 118-122

that the indicated alloys can be used not only at room temperature but also on heating to 100°. The specific weight of the alloys (1.57-1.6 g/cm^3) is lower than the specific weight of the pure Mg. Three illustrations, 4 tables, and a 10-entry bibliography.

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Thermomechanical Treatment

USSR

UDC 669.721.5:539.377:539.4

DRITS, M. YE., SVIDERSKAYA, Z. A., ORESHKINA, A. A.

"High Temperature Thermomechanical Treatment of Deformable Magnesium-Neodymium Alloys"

V sb Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 127-136 (from Rzh-Metallurgiya, No 4, Apr 72, Abstract No 4I701)

Translation: A study was made of the effect of high-temperature thermomechanical treatment on the mechanical properties and structure of deformable Mg-alloys alloyed with Nb: MA11 (Mg-Nd-Mn-Ni) and MA12 (Mg-Nd-Zr). With a degree of deformation of 87%, the optimal conditions of high-temperature thermomechanical treatment for the MA11 alloy is heating the ingots to 490° for two hours, partial cooling and pressing at 350°, and for the MA12 alloy, heating the to 530° for two hours, partial cooling and pressing at 300°. Utilization of the indicated high-temperature thermomechanical treatment conditions by comparison with the T6 conditions used for these alloys at the present time (quenching and aging) offers significant advantages with respect to strength characteristics at room temperature and defined advantages (especially with respect to σ_T) at 250°: δ of the alloys after high-temperature thermomechanical treatment is

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USSR

DRITS M. E., et al., Struktuya i scoystva legk. splavov, Moscow, Nauka Press, 1971, pp 127-136

found to be higher than after low-temperature thermomechanical treatment. A study of the structural variations taking place as a result of high-temperature thermomechanical treatment by the microstructural method, measuring the specific electrical resistance, and the x-ray method demonstrated that the observed nardening is connected with distortions of the crystal lattice of the solid solution rich with Mg and variation of the kinetics of the processes of recovery, recrystallization, and decomposition of the supersaturated solid solution. Four illustrations, one table, and a 7-entry bibliography.

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USSR

UDC 669.721.6:621.78

SVIDERSKAYA, Z. A., and TROKHOVA, V. F.

"Heat Treatment of Magnesium-Lithium Alloys with ($\alpha + \beta$) Structure"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 189-195, resume

Translation: The effect of different types of heat treatment (annealing, hardening, natural and artificial aging) on properties of the three alloys Mg-8%Li-5%Al, Mg-8%Li - 5%Al-3%Sn-1%Zn-0.5%Mn, and Mg-8%Li-5%Al-4%Cd-1%Zn-0.5%Mn was investigated. The highest level of strength properties (σ_b =27-30 kg/mm^2 and $\sigma_{0.2}$ = 20-22 kg/mm^2) was found as a result of hardening (350°C) after heating for 1 hr and natural aging (1-3 days). Properties of heat-treated alloys after aging for 5 months at room temperature dropped negligibly; after heating at 60°C and 100°C for 24 hrs they dropped more substantially but, in both cases, they remained higher than in the hot-pressed condition. Five figures, six tables, six bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 591.182:595.7

SVIDERSKIY, V. L., Invertebrate Neurophysiology Laboratory, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR

"Role of Proprioceptive Afferent Impulses in Controlling the Flight of Insects"

Moscow, Zhurnal Obshchey Biologii, No 1, 1972, pp 42-52

Abstract: Insects do not have such vertebrate types of proprioceptors as muscle spindles. Multiterminal neurons make up stretch receptors that only partly resemble the highly specialized sensory organs of vertebrates. The cuticle and peculiar mode of attachment of the locomotor organs to different parts of it enable insects to obtain information about the contractions of their muscles that occur in response to tensions of the exoskeleton. Certain sensory organs located in the cuticle (e.g., the campaniform sensilla) maintain contact with the external environment and react to external stimuli. According to the literature and the author's own experiments, the role of proprioceptive impulses in controlling the flight of insects varies both with the types of wing muscles that they regulate and with the way these muscles function in different stages of flight. Proprioceptive control of the most rapid rhythmic beating of the wings during steady flight is tonic in character.

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USSR

UDC: 621.315.592

RYABOKON', V. N. and SVIDZINSKIY, K. K.

"Shift of the Radiation Line in GaAs Injection Diodes With Silicon Doping"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972, pp 1096-1102

Abstract: Using as a model a GaAs light emission diode with silicon doping, the authors show that the characteristics of the emission spectra and the variation in the radiation region at various temperatures can be explained by the combined effect of two factors: the inequality in the degree of compensation of the diode base, and the finite width of the impurity zone of the acceptor centers. It is assumed, in this analysis, that the Fermi level throughout the diode base is sufficiently far from the limits of the forbidden zone such that small donors and acceptors are completely ionized in the entire temperature interval. The effect of the impurity zone on the recombination kinetics is estimated, and an expression is obtained for the injection coefficient. The authors express their gratitude to V. Kholodnov for his assistance with the work and to R. Suris for his useful comments.

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USSR

UDC 621.396.6-181.5

SVIDZINSKIY, K. K.

"Principles of Constructing Functional Microelectronic Logic Elements Based on S-Devices"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1282-1290

Abstract: The author considers the principles of construction of functional microelectronic logic circuits whose active element is a device with S-shaped current-voltage curve (S-device). In order to construct logic circuits, use is made of the functional relation between S-devices located on a common semiconductor plate which acts as the base for all the devices. Methods of realizing all elementary logic functions, a shift register, directional transmission line and some functional modules are considered. A qualitative analysis is made of the requirements for the parameters of the devices with regard to the expected scatter of parameters. The proposed principles for construction of logic circuits based on S--devices can be used to design functional devices which perform any logic functions. A comparison of these devices with transistorized logic cir-

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USSR

SVIDZINSKIY, K. K., IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1282-1290

cuits which perform the same functions shows that the units based on S--devices require simpler circuitry, and reduce the number of active elements per elementary logic operation by a factor of 1.5-2. However, it should be noted that using the functional properties of S-devices involves an additional set of requirements for the characteristics of the devices which do not arise in the case of nonfunctional use. Since the functional properties of the devices are based on utilizing volume effects of materials, these additional requirements must be met by the initial material. Thirteen figures, bibliography of eleven titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MATERIALS FOR THE STUDY OF CHORDOMA INNERVATION -U-

AUTHOR-(03)-SVIGUN, V.S., KOLOMIYTSEV, A.K., YATSENKO, V.P.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 5, PP 57-60

DATE PUBLISHED--------70

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CIRC ACCESSION NO--AP0131328 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH AID OF DIVERSE METHODS OF IMPREGNATION AND STAINING THE AUTHORS HAVE STUDIED THE SACROCOCCYGEAL CHORDOMAS AND THE ADJACENT TISSUES OPERATIVELY ABLATED IN 10 PATIENTS. IN ALL THE CASES, A CLOSE CORRELATION WAS FOUND BETWEEN THE CONSTITUTING COMPONENTS OF THE TUMOR AND THE NEWLY FORMED NERVE ELEMENTS. THESE WERE ECPECIALY ABUNDANT IN THE CAPSULE SURROUNDING THE CHORDOMA WHERE, PARALLELLY WITH NERVE TRUNKLETS AND SINGLY DISPOSED AXONS, NUMEROUS PRIMITIVELY ARRANGED TERMINAL DEVICES OF THE TYPE OF LOOPS, BUTTONS OR NETWORK, AS WELL AS MORE INTRICATELY ARRANGED CLUSTER OR TENDRIL TIKE ENDINGS HAVE BEEN DETECTED. THE THICKNESS OF CHORDOMA WAS FOUND TO BE PENETRATED ALONG THE CONNECTIVE TISSUE STRATA BY NUMEROUS NERVE FIBERS LYING SIOLATELY OR FORMING BUNDLES DISPOSED AMONG CELLS OF THE TUMOR. THE TUMOR NODES CONTAIN TWO TYPES OF NERVE ENDINGS. SOME OF THEM ARE REPRESENTED BY LOCALIZED ARBORIZATIONS, THE OTHER BY PRIMITIVE DEVICES OF THE TYPE OF LOOPS, BUTTONS OR SMALL BULGINGS, IMMEDIATELY CONTACTING WITH CELLS OF THE CHORDOMA. FACILITY: KIEV. INSTITUTA EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AND KAFEDRY GISTOLOGII I EMBRIOLOGII KIEV, MEDITSINSKOGO INSTITUTA.

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USSR

UDC 536.242

KARTSEV, V. A., and SVIKLIS, B. B., Institute of Physics, Academy of Sciences Latvian SSR

"Influence of Magnetic Field on Heat Exchange of an Anomalously Viscous Fluid"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 5, 1970, pp 74-79

Abstract: The article considers heat exchange in the plane-laminar magnetohydrodynamic flow of an anomalously viscous fluid in a channel with nonconducting walls. A solution is obtained for the energy equation for fully developed flow when the channel operates under a short-circuit mode ($\phi = 0$) and a no-load mode ($\phi = 1$). An analysis is given of the dependence of the Nusselt number Nu on the generalized Hartmann number M for the magnetohydrodynamic flow of a non-Newtonian exponential fluid at various values of the rheological parameter n and the head load k on the channel with and without allowance for anomalously viscous and joulean dissipation. Functions are given which show

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USSR

KARTSEV, V. A., and SVIKLIS, B. B., Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 5, 1970, pp 74-79

that an increase in the number M significantly influences heat transfer, especially at $\phi = 1$. The greater the rheological parameter n and the weaker the heat flux k on the walls, the more intensive is the change in the absolute value of Nu. An increase in the non-Newtonian parameter n and a decrease in the heat load on the channel walls result in a decrease in the value of M at which $Nu \to \pm \infty$, with the value less at $\phi = 0$ than at $\phi = 1$. The analysis indicates that in dilatant fluids intensive heat exchange takes place at low values of the generalized Hartmann number.

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USSR

VIDENIYEKS, P. O., SVILANS, M. P.

UDC 62.372.852.3(088.8)

"High-Frequency Attenuator"

USSR Author's Certificate No 251033, Filed 17 May 68, Published 11 Feb 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A370P)

Translation: High-frequency attenuators containing a set of resistors forming the links of π-type 4-terminal circuits, a commutator with an index and a drive mechanism connected to the commutator exist. The purpose of the invention is improvement of the mutual decoupling between the links of the attenuator, increasing the stability of its parameters and improvement of the accuracy of setting the moving element of the commutator. The design is described.

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USSR

KUTSENKO, N. T., and SVINAR', N. K. UDC 51

"One Method of Solving the Problem of Assignments"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No 24, pp 51-54 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V399)

Translation: The problem of the optimal distribution of work between performers consists of the problem of optimization of a linear functional on a set of permutations. A method of consecutively raising the dimensionality is proposed to solve the problem. The optimal permutation A_{k+1} of dimensionality k+1 is obtained from the permutation A_k by the formula $A_{k+1} = A_k X$, where X is some cyclic permutation which is determined by the dynamic programming method. Authors' abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

KUTSENKO, N. T., SVINAR', N. K. UDC: 51

"One Method of Solving the Problem of Assignment"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-tekhn. Sb. (Automation Systems and Devices], 1972, No 24, pp 51-54 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V599, by the authors)

Translation: The problem of optimal distribution of work among workers is a problem of optimization of a linear functional in a set of permutations. A method of successive increases in dimensionality is suggested for its solution. The optimal permutation A_{k+1} of dimensionality k+1 is produced from permutation A_k using the formula $A_{k+1}=A_kX$, where X is a certain cyclical permutation determined by dynamic programming.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 616.921.5-085.37

BAKALOV, A. N., FEL'DMAN, E. B., and SVINARENKO, K. I., Mogilevskaya Oblast Health Department

"Some Data on the Effectiveness of Anti-Influenza Vaccination Under Conditions of an Epidemic Increase in the Incidence of Influenza and Acute Respiratory Diseases"

Minsk, Zdravookhraneniye Belorussii, No 9, Sep 70, pp 81-83

Abstract: Data on the incidence of influenza from 59 industrial enterprises were analyzed in an attempt to correlate them with the level of vaccination. It was concluded that prophylactic vaccination against influenza is ineffective and unjustifiable unless the total population is covered. Immunoprophylaxis against influenza is epidemiologically effective only when 86-99% of the population are vaccinated with dry live vaccine.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 621.224.532.5.001.57

SVINAREV, G. A., Char'kov Branch of the Institute of Mechanics of the Academy of Sciences of the USSR

"Determination of the Curvature of Profiles of Axial Rotors With Regard for the Flow Lag Angle"

Kiev, Gidromekhanika, No 18, 1971, pp 96-103

Abstract : A detailed analysis is made conformably to the determination of the curvature degree of profiles in calculated sections of rotor blades of hydraulic turbines. On the basis of discussed materials, it is demonstrated that the flow lag angle ε has to be taken into consideration in calculations of profiles of low-pressure rotors of axial type (lattice density $\tau < 1.0$), according to the method of G. F. Proskura, by introduction of a correction coefficient, since ε increases by more than two times in comparison with high-pressure rotors with $\tau > 1.0$. For investigated rotor lattices of profiles of the series VIGMK, values of correction coefficients are given in a table for relative curvatures of $\bar{f}_m = 0.02$ and $\bar{f}_m = 0.04$, respectively for the profile curvature angles of $\theta = 9.13$ deg. and $\theta = 18.27$ deg. Four illustr., nine formulas, five tables, eight biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

Lasers/Masers

USSR

UDC 621.373:530.145.6

BOGDANKEVICH, O. V., ZVEREV, M. M., MESTVIRISHVILI, A. N., NASIBOV, A. S., PECHENOV, A. N., SVIRENKOV, A. I., FEDOSEYEV, K. P.

"A High-Power Semiconductor Maser With Electron Beam Pumping"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 2, Moscow, 1971, pp 92-93 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D113)

Translation: To increase the power of a semiconductor maser with electron beam pumping, the authors study multielement structures of gallium arsenide and cadmium sulfide. An emission power of 1.5 MW is achieved when a semiconductor maser on gallium arsenide is excited by an electron beam with an energy of 300 keV and a current of 300 A. Two illustrations, bibliography of five titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 621.378.35

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BOGDANKEVICH, O. V., ZVEREV, M. M., MESTVIRISHVILI, A. N., NASIEOV, A. S., PECHENOV, A. N., SVIRENKOV, A. I., FEDOSEYEV, K. P.

"A High-Power Semiconductor Laser With Electron-Beam Pumping"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 92-93

Abstract: Multiple-element structures of gallium arsenide and cadmium sulfide are studied for the purpose of increasing the power of a semiconductor laser with electron-beam pumping. An emission power of 1.5 MW is achieved when a gallium arsenide semiconductor laser is stimulated by a beam of 300 keV electrons at 300 A. Two figures, bibliography of five titles.

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USSR

SVINSHCHUK, A. A., VYSOTSKIY, N. N., and CHEREPENKO, T. I. UDC 632.95

"Synthesis and Physiological Properties of Derivatives of Trimethylhydroquinone Phosphoric Acid"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 31-33 (from Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N647 by T. A. Belyayeva)

Translation: The compounds, 2,3,5-Me_3-1-OR-4-R'OC_6H_5 (compound I, where R = H, PhCo, Me, and P-containing groups; and R' = H or P-containing groups) were synthesized and a study was made of their physiological activity by a method of retarding the growth of fungus in a solid medium. To 5 g of compound Ia (I where R=R'=H) was added 100 ml of water, 10 g of Na_2CO_3, and 4.6 g of PhCOCl, the latter dropwise. This precipitated compound Ib (I where R=COPh and R' = H) with a melting point 146-148" (ethanol as solvent) and a yield of 62%. To a chilled solution of 4.6 g of Ia in 100 ml of ethyl ether was added 5 g of $Cl_2P(O)NCO$, stirred for 3 hours. Petroleum ether was added, the solution was allowed to stand for about 16 hours, then 9.5 g of compound. Ic (I where R = $CONHPOCl_2$ and R' = H) which had a melting

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USSR

SVINSHCHUK, A. A., et al., Fiziol. aktivn. veshchestva. Resp. Mezhved. sb. Vyp 4, 1972, pp 31-33

point of 160-161°C was obtained by filtering. From Ic was obtained a compound (I where R = $CONHPO(OPr)_2$ and R' = H) which had a melting point of 156-158°. To a chilled solution of 7 g of Ib in 100 ml of pyridine were added 4.2 g of $POCl_3$. The solution was filtered, concentrated, 100 ml of 1N H_2SO_4 were added. The solution was allowed to stand for about 16 hours and 5.2 g of a compound (I where R = COPh and R' = $PO(OH_2)$) which decomposed at 262-264° were obtained. The reaction of Ib with $Cl_2P(O)NCO$ resulted in the formation of compound Id (I where R = COPh and R' = $CONHPOCl_2$) have a melting point of 108-110°C. Another compound (I where R=Me and R' = $CONHPOCl_2$) having a melting point of 128-130°C was also obtained. For the fungicide activity, a 0.1 and 0.5% solution of Id did not match the standard compound, figon, in regards to Alternaria radicina, Aspergillus niger, Fusarium oxysporum, and Helminthosporum sativum.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

Hydrometeorology

SVINUKHOV, G. V.

UDC 551.509.(314+323+324)(571.6)

SYNOPTIC-STATISTICAL METHODS OF FORECASTING THE MEAN MONTHLY AIR TEMPERATURE AND AMOUNT OF PRECIPITATION DURING THE WINTER IN THE FAR EAST

[Article by Candidate of Physical and Mathematical Sciences G. V. Svinukhov, Far Eastern Scientific Research Hydrometeorological Institute; Moscow, Meteorologiya i Gidrologiya, Russian, No 11, 1971, submitted 29 January 1971, pp 32-37]

A study was made of the relation between the state of the centers of activity of the atmosphere in the Northern Hemisphere and weather in the territory of the Far East. On the basis of these relations, using the empirical influence functions, procedures are proposed for forecasting the mean monthly air temperature and the amount of precipitation for the winter months with respect to individual regions of the Far East with a five month lead time.

At this time, the statistical methods of long-range weather forecasting using high speed computers have received broad development both in the Soviet Union [1, 2, 4, 11] and abroad [10, 12].

In the Far East very few operations have been performed in this area. There are a total of two papers [7, 8] in which the calculation procedures are proposed for forecasting the mean monthly air temperatures with respect to individual stations of the Far East. Thus, in [7], set regression equations have been constructed which permit forecasting of the mean monthly air temperature for May, July and August with a lead time of 4-7 months with respect to 6 stations of the Primorskiy Kray. In reference [8], regression equations are presented for forecasting the mean monthly temperature anomaly for all months of the year with respect to a number of stations in the Far East with 25 day and zero lead time. The forecasts of the temperature anomaly are used in the operative practice of the synoptic research division of the Far Eastern Scientific Research Hydrometeorological Institute when refining the monthly weather forecasts. Operative checking of the forecasts compiled by the procedures of [7, 8] demonstrated that the forecasts of the mean monthly air temperature anomalies have a satisfactory rating with respect to sign and, as a rule, unsatisfactory with respect to magnitude.

JPRS 54974
19 Jan 72

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 577.1:615.7/9

GRIGOR'YANTS, N. N., and SVINTSOVA, V. K.

"Variation in Catalase Activity of the Blood Under the Effect of Strontium"

Zdravookhr. Turkmenistana (Public Health in Turkmenistan), 1972, No 10, pp 7-9 (from RZh-Biologicheskaya Khimiya, No 10, 1973, Abstract No 10F2121)

Translation: For rabbits a single subcutaneous injection of strontium nitrate in doses of 0.01-500 γ Sr/kg caused no significant changes in the catalase (I) activity of the blood 1 to 3 hours after administration. Another group of rats ate strontium nitrate daily in doses of 0.1, 10 and 5,000 γ /kg for 30 days, and the I activity was analyzed on the tenth, 20th and 30th days. After 10 days of eating Sr, the I activity was 108.1-1-134.7% of the control (calculated per erythrocyte). After 20 days it was 154.9% (independently of the dose), and after 30 days it decreased somewhat, but it remained above the control indexes. It is concluded that for the doses used on prolonged administration Sr is a I activating agent in the blood.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

A10050587 Abstracting Service: CHEMICAL ABST. 5/72

Ref. Code: UP0139

94965e Effect of light on the spectra and intensity of the luminescence of lithium hydride crystals activated by magnesium, indium, tin, and lead. Gavrilov, F. F.; Dvinyaninov, B. L.; Svinyakov, V. I. (Ural. Politekh. Inst. im. Kirova, Sverdlovsk, USSR). *Izv. Vyssh. Ucheb. Zaved., Fiz.* 1970, 13 (1), 152–3 (Russ). The LiH crystals were irradiated at room temp. by using the lamp SVDSh-250. The course of the luminescence spectra of the non-irradiated LiH crystals depended on the compn. of the activators, and on the technology of their prepn. The crystals activated with Mg, In, and Sn gave a red and blue luminescence with max. at 640–50, and 450–70 nm. With samples activated with Mg there was also a yellow luminescence at 560 nm. The crystals LiH(Pb) gave only a red luminescence at 680–90 nm. The crystals of LiH(Mg) and LiH(In) changed after irradn., the predominant red being transformed into a blue one, the degree of the change depending on the exciting wavelength. After irradn. of LiH(Pb), the position and the shape of the band remained unchanged; the change was obsd.

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at the integral intensity only. The intensity of the red luminescence decreased sharply with increasing irradn. dose. The degree of this change depended on the activator, and it increased in the sequence: In, Mg, Sn, and Pb (the stability of the crystals towards light decreased). The intensity of the yellow band in LiH(Mg) changed analogously. The intensity of the blue luminescence band of the majority of the studied crystals changed very little with increasing radiation dose, with the exception of some crystals of LiH(In) and LiH(Mg), where the intensity of the blue band rose with the irradn. dose. The weakening of the intensity of the red and yellow luminescence was attributed to the origin of strong absorption bands in the red or yellow region, accompanied by the simultaneous destruction of the red and yellow luminescence centers, a result of the irradn. process. The increase in the blue luminescence was explained by the formation of new luminescent centers, due to the interaction of the surface of the crystals with the surrounding atm. This interaction proceeds much faster during irradn. than during its absence.

E. Svatek

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

SVIRCHEVSKAYA, G. V.

UDC: none

"Seminar on Radar"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 109-110

Abstract: The second Ukrainian Scientific and Technical Seminar on Radar, organized by the Scientific and Technical Society of Radio Engineering, Electronics and Communications, was held 26-29 November 1970 in Sevastopol. Cooperating with the Society in organization of the seminar was the Department of Radio Engineering Systems of Odessa Polytechnical Institute. More than 100 scientific workers, teachers and engineers from various cities of the Soviet Union took part in the work of the seminar. Fifty-two papers were read and discussed in sections on "Optimum Filtration" and "Elements and Devices in Radar and Measurement Technology". The authors and titles of some of the papers are given. Topics covered included effective methods of synthesizing filters for optimizing the mutual function of indeterminacy with respect to predetermined criteria, evaluating the possibility of using unmatched processing in certain instances for improving resistance to interference, signal theory, nonlinear and adaptive systems of signal processing, improving the effectiveness of isolating useful signals against a background of interfering reflections, methods of realizing the selection of moving targets, and improving the quality of radar signal detection.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

TITLE--QUANTITATIVE DISTRIBUTION OF SUSPENDED MATTER IN THE ATLANTIC OCEAN FROM THE DATA OF THE 2ND CRUISE OF THE BELOGORSK -U-

PROCESSING DATE--23OCT70

AUTHOR--SVIRENKO, I.P.

COUNTRY OF INFO--USSR, ATLANTIC OCEAN

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 474-478

DATE PUBLISHED-------70

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

TOPIC TAGS--OCEAN, SEA WATER SAMPLER, PLANKTON, OCEANOGRAPHIC SHIP/(U)BELOGORSK OCEANOGRAPHIC SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1839

STEP NO--UR/0213/70/010/003/0474/0478

CIRC ACCESSION NO--AP0129204

UNCLASSIFIED

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CIRC ACCESSION NO--AP0129204 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WATER CONTENT OF SUSPENDED MATTER IN THE ATLANTIC OCEAN IS CHARACTERIZED QUANTITATIVELY BASED ON 472 SAMPLES TAKEN ENROUTE. THE CENTRAL WATERS OF THE OCEAN HAVE THE LOWEST QUANTITIES OF SUSPENDED MATTER RANGING BETWEEN 0.2 OR 0.3 AND 1.0 MG,L IN THE SURFACE LAYER. THE PARTICULATE MATTER IS SOMEWHAT MORE ABUNDANT IN THE VICINITY OF ISLANDS ABOVE THE SLOPES OF UNDERWATER RISES AND IN LOCALITIES OF THE MASS DEVELOPMENT OF PLANKTON. UNLIKE THE OPEN OCEANIC AREAS, THE COASTAL WATERS ARE CHARACTERIZED BY ESSENTIAL VARIATIONS IN SUSPENDED MATTER CONCENTRATIONS FROM 0.3 TO 47.0 MG,L. THE MOST IMPORTANT FACTORS RESPONSIBLE FOR THIS PHENOMENON INCLUDE CONTINENTAL DISCHARGE AND SEA CURRENT DIRECTION. THE DISCHARGE OF SUCH LARGE RIVERS AS THE AMAZON, ORINOCO, LA PLATA AND OTHERS IS CONSIDERED FROM THE POINT OF VIEW OF THEIR POSSIBLE INFLUENCE. FACILITY: ATLANTICHESKOYE OTDELENIYE INSTITUTA OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR, KALINGRAD.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 771.531.3

ANDREYANOV, V. V., GRECHKO, L. V., SVIRIDENKO, M. N., and SVIRIDENKO, A. I., Shostka Branch of the State Scientific-Research Institute of Chemical-Photographic Design

"A New Color Reversible Film TsO-T-90L for TV"

Moscow, Tekhnika Kino i Televideniya, No 6, Jun 72, pp 22-25

Abstract: The State Scientific-Research Institute of Chemical-Photographic Design and the Shostka Chemical Combine devised the film for reporting purposes either in artificial lighting or, with special filter, in daylight.

One positive feature of the new film is that when black-white development time is changed, the film shows no light-sensitivity balance among the several layers. In addition, during developing, light sensitivity can be increased and the contrast factor reduced, without any perceptible effect on light transmission.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

SVIRIDENOK, A. I., STARZHINSKIY, V. Ye., and ZHULEGO, V. T., Institute of the Mechanics of Metal-Polymer Systems, Academy of Sciences, Belorussian SSR

UDC 678.01:539.376

"Some Engineering Applications of Contact Problems in the Theory of Visco-elasticity"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 1, 1972, pp 57-65

Abstract: In this article, which deals with some engineering applications of contact problems, an effort is made to provide a solution of a contact problem for linear viscoelastic solids of the simplest shape (a sphere, a cylinder). To describe the process of change of the contact parameters with respect to time, there has been selected a law of deformation in differential form with an exponential time function. Calculation relationships are presented for determination of the contact parameters. Satisfactory coincidence of the experimental and calculation data is obtained. 2 figures, 32 bibliographic entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

Industrial

USSR

UDC:662.215.2

AMELINA, L. S., GAYEK, Yu. V., SVIRIDENKO, A. N., Dnepropetrovsk

"Energy Evaluation of the Process of Welding of a Bimetal Using Explosive Energy"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 358-363

Abstract: Experimental data are presented to indicate the energy capacity of explosive welding of copper with stainless steel. The experiments were performed using tubular specimens. It is established that the boundary between the steel and copper may be wavy or almost straight, the geometry of the waves depending on the thickness of the copper cladding layer and the radial velocity with which the inner tube expands under the influence of the explosive charge to meet the outer tube. It is noted that the welded boundary is heterogeneous in its structure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

UDC 632.95

RASKIN, M. S., USKOVA, L. A., SVIRIDENKO, A. S., RYZHKOV, A. A., BABIN, YE. P.

"Analysis of 2-Methoxy-3,6-dichlorobenzoic Acid in Plant Mass by a Combined Method"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 363-365 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N503)

Translation: The herbicide is extracted from the plant mass, the dry extract is dissolved in a mixture of 75% alcohol with dioxane (4:1); it is applied to the first entire bean leaves at the time of development of the first trefoil (50 microliters/plant); the plants are gathered 5-6 days after treatment considering the weight of the dry mass of the trefoil.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

USSR

ANDREYANOV, V. V., GRECHKO, L. V., SVIRIDENKO, M. N., and SVIRIDENKO, A. I.,
Shostka Branch of the State Scientific-Research Institute of Chemical-Photographic Design

UDC 771.531.3

"A New Color Reversible Film TsO-T-90L for TV"

Moscow, Tekhnika Kino i Televideniya, No 6, Jun 72, pp 22-25

Abstract: The State Scientific-Research Institute of Chemical-Photographic Design and the Shostka Chemical Combine devised the film for reporting purposes either in artificial lighting or, with special filter, in daylight.

One positive feature of the new film is that when black-white development time is changed, the film shows no light-sensitivity balance among the several layers. In addition, during developing, light sensitivity can be increased and the contrast factor reduced, without any perceptible effect on light transmission.

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USSR

Communications

SVIRIDENKO, S. S.

UDC: 621.391.17

"Noise Immunity of Synchronous Communications Systems With Random Detuning"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1095-1100

Abstract: Asserting that the synchronous communication system is the simplest variation of the adaptive system, the author defines it as a system in which, to receive a signal with random parameters, an optimal receiver with completely known signals is used in combination with systems for estimating the signal parameters and for tuning the receiver characteristics for best correspondence between symbols at the input and output of the communication system. He then analyzes the noise immunity of the reception of signals, adaptive for time, with discrete modulation by the coherent receiver for nonideal determination of the moment of signal arrival. The signals may be simple or complex -- discrete pseudo-random signals, for example -- and the remaining signal parameters are assumed to be exactly known. The results of this analysis are

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USSR

SVIRIDENKO, S. S., Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1095-1100 UDC: 621.391.17

compared with similar results in an earlier paper (V. T. Coryainov, Trebovaniya k tochnosti taktovoy sinkhronizatsii v sistemakh peredachi dvoichnoy informatsii -- Accuracy Requirements of Cyclic Synchronization in Binary Information Transmission Systems -- Izv. VUZ SSSR--Radioelektronika, 13, No 7, 1970, p 787) for the case of noncoherent AM and FM reception.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--SIGNAL RECEPTION LOWERING THE SYNCHRONIZATION ACCURACY REQUIREMENTS -U-

AUTHOR-(02)-SEREGIN, YU.V., SVIRIDENKO, S.S.

COUNTRY OF INFO--USSR

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

DATE PUBLISHED----APR70

SUBJECT AREAS--NAVIGATION

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

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0309

STEP NO--UR/0108/70/025/000/0101/0103

CIRC ACCESSION NO--AP0134113

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

CIRC ACCESSION NO--AP0134113 PROCESSING DATE--20NOV70

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

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

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

PROCESSING DATE--30OCT70

AUTHOR-(02)-SVIRIDENKO, S.S., SEREGIN, Y.V.

COUNTRY OF INFO--USSR

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

DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION

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

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1285

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

CIRC ACCESSION NO--AP0123244

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY OPTIMAL RECEPTION OF RECTANGULAR PULSE AND PSEUDORANDOM SEQUENCE TYPE DISCRETE SIGNALS UNDER CONDITIONS OF NONIDEAL SYNCHRONIZATION. RELATIONSHIPS ARE OBTAINED FOR THE AVERAGE PROBABILITY OF ERROR AND FOR THE OPTIMAL THRESHOLD.

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PROCESSING DATE--30OCT70

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

UNCLASSIFIED

CONDITIONS OF DYNAMICS OF BUBBLE BOILING OF WATER ON FINE WIRES UNDER -U-

PROCESSING DATE--18SEP70

AUTHOR-(05)-SUBBOTIN, V.I., KAZONVSKIY, S.P., KOROTAYEV, S.K., SVIRIDENKO, V.YE., SELIVANOV, YU.F.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. (USSR) 28, 9-13 JAN 1970

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BOILING, FLUID DYNAMICS, GAS DYNAMICS, CONVECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1596

STEP NO--UR/0089/70/028/000/0009/0013

CIRC ACCESSION NO--AP0047918

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203220010-9

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UNCLASSIFIED

CIRC ACCESSION NO--AP0047918

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CINEMATOGRAPHIC STUDY OF THE PROCESS OF BUBBLE BOILING ON FINE WIRES UNDER THE CONDITIONS OF FREE CONVECTION WAS CARRIED OUT. DIRECTIONS OF ESCAPING OF BUBBLES FROM THE SURFACE OF A HEATER WERE DETERMINED. ON THE BASIS OF SOLVING THE EQUATION OF MOTION OF A BUBBLE AND BY A MEASUREMENT OF THE DISTANCE PASSED BY IT IN THE DIRECTION OPPOSITE TO THAT OF THE ACTION OF THE LIFTING FORCE, FROM THE MOMENT OF ESCAPING TILL FULL STOP, THE VALUE OF KINETIC ENERGY NECESSARY FOR OVERCOMING THE GRAVITATIONAL FORCES IS DETERMINED. THE CONCLUSION IS MADE ABOUT A NONGRAVITATIONAL NATURE OF FORCES, CAUSING ESCAPING OF A VAPOR BUBBLE FROM THE SURFACE OF A HEATER. SOME HYPOTHESES CONCERNING THE NATURE OF THESE FORCES HAVE BEEN PROPOSED.

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UDC: 621.039.526

USSR

DOBROVOL'SKIY, V. F., ZHUKOV, A. V., SVIRIDENKO, YE. YA., SUBBOTIN, V. I. and USHAKOV, P. A.

"A Study of the Temperature Fields of Fuel Elements in Fast Reactors During Variable Energy Release with Respect to Zone Height"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, p 490

Abstract: The authors experimentally determined the temperature fields of the central, lateral, and corner elements of a BOR [expansion unknown]-type reactor cassette model during cosinusoidal energy release along the height of the model. The results show that the heat flux varying with respect to length evokes deformation of the temperature profile in the channel because of the varying amount of heat supplied at each section of the channel. As a result of this, a change takes place in the numerical values of the heat-transfer coefficients along the channel. A reduction of the heat-transfer coefficients in the upper part of the active zone of a BOR-type reactor as the result of variable energy release does not present a danger to the operation of the fuel elements since the numerical values of the mean temperature difference for wall-fluid are small in the case of sodium heat-transfer agent. The maximum temperature nonuniformity of the fuel elements of a BOR-type reactor can be estimated with respect to the mean along the height of the heat flux zone starting with test data obtained for q = const.

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USSR

SUBBOTIN, V. I., USHAKOV, P. A., ZHUKOV, A. V., and SVIRIDENKO, YE. YA.

"Temperature Fields of the Fuel Elements in the Active Zone of a BOR Reactor"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, pp 489-490

Abstract: The authors studied the temperature fields and heat emission in a cassette model of an experimental BOR /expansion unknown/-type reactor using fast neutrons with smooth and ribbed models of fuel elements and with and without displacers in the peripheral elements. The model consists of a hexagonal shell with 37 elements (fuel element models) arranged in a checkerboard-type lattice with $\frac{S}{2R} = 1.1$ where S is the distance between the element centers and R is the outer radius of the elements. Energy release along the height of the model was constant. The results show that the greatest variation in temperature of lateral elements is observed in the model with smooth elements without displacers. The addition of displacers to the peripheral cells reduces temperature nonuniformity. Winding the elements with spacing wire further reduces temperature nonuniformity. Formulas are given for the following: maximum temperature variation as a function of the Peclet number, for cassettes without displacers with smooth and ribbed fuel elements correspondingly, and temperature variation along the perimeter of the smooth central elements (this nonuniformity varies according to a cosinusoidal rule). The numerical values for nonuniformities are in agreement with data obtained using M. Kh. Ibragimov's and A. V. Zhukov's methodology. A formula is given for stabilized heat emission factors.

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USSR

KLEMENTOV, A. D., MIKHAYLOV, G. V., NIKOLAYEV, F. A., ROZANOV, V. B., SVIRIDENKO, Yu. P.

"High-Current Pulse Discharge in Lithium"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low-Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 269-275 (from RZh-Khimiya, No 4, Apr 71, Abstract No 4B52)

Translation: The authors report on a study of a high-power pulse source of light produced by an electric discharge in a lithium plasma as the working medium. A cylindrical chamber with quartz walls was used with an inside diameter of approximately 90 mm, the distance between the steel hemispherical electrodes being 145 mm. The chamber was evacuated to a pressure of 10^{-6} mmHg. The lithium wire was 0.1 mm in diameter. The discharge energy [illegible] the lithium vapor formed by an electric explosion. The discharge was fed from two condenser banks -- a main bank and an auxiliary bank with energy capacities of 22 and 4.5 kJ respectively. The pulse from the auxiliary bank was delayed by 25 μs relative to the beginning of

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KLEMENTOV, A. D., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

the discharge from the main bank. The duration of the first half-cycle of the current discharge from the main bank was 75 μs with a corresponding figure of 15 μs for the auxiliary bank. The current and voltage of the discharge were determined by a Rogowski loop and a voltage divider. The dynamic process of development of the discharge filament was recorded by the SFR instrument operating in the single-frame mode at a rate of 10^6 frames per second. Emission from the central zone of the discharge was registered by a spectrograph with time scanning and in the integrated exposure [illegible].

It [illegible] that the discharge develops only in the exploding wire vapors. [illegible] filament expanded at a nearly constant rate of approximately 1.3 km/s, reaching the walls of the chamber about 50 μs after beginning of the current pulse. Brightness distribution through the discharge filament is nonuniform,, which is due to localized non-uniformities [illegible] density and temperature. Discharge emission consists of an intense continuous spectrum which carries the main part of the energy, and superimposed [illegible] emission, which is analyzed. It is found that maximum brightness temperature in the 510 nm region is 17,000°K. Emission during the second half-cycle of the current is considerably weaker -- the 273

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KLEMENTOV, A. D. et al., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozanov.

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1/2 053

TITLE--LIGHT ABSORPTION BY RUBY IN THE PRE BREAKDOWN STATE -U-

AUTHOR-(03)-BELIKOVA, T.P., SAVCHENKO, A.N., SVIRIDENKOV, E.A.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTENSE LIGHT FROM A POWERFUL RUBY LASER IN FOUND TO INDUCE IN THE RUBY AN ABSORPTION INCREASE, PRECEDING DESTRUCTION. THE KINETICS OF THIS INCREASE UNDER THE ACTION OF THE PULSE IS INVESTIGATED. ESTIMATES ARE MADE OF THE DEPENDENCE OF THE SHOCK WAVE PRESSURE ON THE ABSORPTION AND INTENSITY OF THE INCIDENT LIGHT. FACILITY: FIZICHESKIY INSTITUT IM. P.N. LEBEDEVA AN SSSR.

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