"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125833

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENCE INTENSITY I SUBLUM OF AIR BOMBARDED WITH 2-4 MEV E PULSES (FROM A LINEAR ACCELERATOR) IS INDEPENDENT OF THE E ENERGY AND INCREASES LINEARLY 1-3.5 ARBITRARY UNITS WHEN THE E CURRENT IN A PULSE IS INCREASED 30-110 MA, I.E., THE INTENSITY IS PROPORTIONAL TO THE ABSORBED DOSE RATE AND THE LUMINESCENCE OF AIR CAN THUS BE USED AS THE BASIS OF A NEW DOSIMETRIC METHOD.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Electromagnetic Wave Propagation

USSR UDC:532.501.32

VEL'MIN, V. A., MEDVEDEV, Yu. A., STEPANOV, B. M., Moscow

"Transmission of Radio Waves Through the Area of an Explosion"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 410-413

Abstract: Results are presented from an experimental study of the peculiarities of transmission of radio waves in the centimeter wave length range through the unstable area of an explosion. When explosions were set off on the transmission path of a 3.2 cm radio wave, two transmission minima were observed, with a maximum between the two minima at a level higher than the zero line (level of transmission without explosion). The first minimum is apparently related to coverage of the direct radio waves by a strong shock wave sufficient to create strong ionization and consequently high conductivity on the wave front, causing the wave front to be nontransparent. Experiments involving replacement of this proposed conducting area with a conducting metal plate indicated satisfactory correspondence

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR UDC:532.501.32

VEL'MIN, V. A., MEDVEDEV, Yu. A., STEPANOV, B. M., Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 410-413

between theory and experimental results. A possible future application might be estimation of parameters of explosions by transmission of radio waves through explosion zones.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

VEL'MIN, V.A., MEDVEDEV, Yu.A., PUNKEVICH, B.S., and STEPANOV, B.M., All-Union Scientific Research Institute of Optico-Physical Measurements

"Magnetic Field Probing of the Detonation Region of a Charge of Explosives"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 1, Mar 71, pp 70-72

Abstract: On the basis of previous research, it has been found that the distortion in a constant extrinsic field is lower than the sensitivity of the magnetic field sensors used. In order to increase the field perturbation created by an explosion up to easily observable values it is necessary to either increase the initial field or the magnitude of the explosion or to conduct the explosion in a variable field that varies at the frequency for which the thickness of the skin-layer is on the order of magnitude of the detonation region. It is simplest to create the detonation in a variable magnetic field. This article describes the appropriate experiments in this direction and the results obtained therefrom.

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Figure 1 in this article shows a typical oscillogram of the process and Figure 2 gives the signal of un-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

VEL'MIN, V.A., et al, Doklady Akademii Nauk SSSR, Vol 197, No 1, Mar 71, pp 70-72

balance as a function of time, averaged over about 100 tests, in relative units. The conclusion is reached that at least in the initial moments of time the conductivity is concentrated in the layer where, for small values of t, the effective thickness of the conducting layer is much less than the difference in radii of the front of the shock wave and the leading edge of the explosion products and that it grows with time.

The obtained results may be explained by the decrease in the temperature gradient with the passage of time and consequently by the increase in the characteristic length by which the degree of thermal ionization of air drops near the contact surface of the explosion products. Additional data are needed on the magnitude of $\Delta(t)$ at these moments in order to determine the absolute values of the time-averaged conductivity.

The article contains 2 figures and a bibliography of 5 titles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

1/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--POSSIBLE USE OF LIQUID CRYSTALS FOR PHOTOGRAPHING SINGLE PULSES OF THERMAL RADIATION -U-

AUTHOR-(05)-GINZBURG, V.M., SMIRNOV, V.I., SONIN, A.S., STEPANOV, B.M., CHISTYAKOV, I.G.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 206-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEODYMIUM LASER, LIQUID CRYSTAL, THERMAL RADIATION, PHOTOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0870 STEP NO--UR/0120/70/000/002/0206/0207

CIRC ACCESSION NO--AP0136304

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 2-DIMENSIONAL IMAGE WAS OBTAINED OF A THERMAL FIELD GENERATED BY A SINGLE PULSE RADIATION NO LASER (PULSE ENERGY SIMILAR TO 0.5 J, PULSE DURATION 2 TIMES 10 PRIME NEGATIVE8 SEC) USING A LIQ. CRYSTAL MIXT. OF 70PERCENT CHOLESTEROL PELARGONATE AND 30PERCENT CHOLESTEROL OLEATE. THE SELECTIVITY OF THE SCATTER OF THE MIXT. RANGES FROM 59.8 TO 62.2DEGREES. FACILITY: VNII OPT.-FIZ. IZMER., USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

PANASYUK, V. S.; SOKOLOV, A. A.; STEPANOV, B. M.

"Principles of the Construction and Possible Applications of Accelerators with Superstrong Magnetic Fields Obtained by Detonations"

Moscow, Atomnaya Energiya; November, 1972; pp 907-12

ABSTRACT: Several designs of single-stage accelerators with superstrong magnetic fields are presented. Betatrons and high-frequency cyclic accelerators, as well as direct-action accelerators, are considered. Various methods of particle injection and extraction are described. Possible applications of the cyclic accelerators described for obtaining superhigh-energy particles are assessed. Such accelerators seem promising for the acceleration of beams of secondary particles as well as for experiments on intersecting beams of μ-mesons and π-mesons, of fundamental importance in high-energy physics.

The article includes 14 equations and five figures. There are 10 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--A MODELING DEVICE -U-

AUTHOR-(02)-KRASYUKOV, V.A., STEPANOV, B.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. PATENT NO 264007
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NR 8,
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, MEMORY ELEMENT, CATHODE RAY TUBE, MAGNETIC METHOD,
ELECTRONIC CIRCUIT MODELING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1781 STEP NO--UR/0482/70/000/008/0121/0121

CIRC ACCESSION NO--AA0130614

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A MODELING DEVICE WHICH CONTAINS A CURRENT CARRYING MODELING FRAME WITH CURRENT REGULATOR, MAGNETIC FIELD PICKUPS, COMMUTATORS, A CONVERTER, AND A CATHODE RAY TUBE WITH SCANNING UNIT. AS A DISTINGUISHING FEATURE OF THE PATENT, THE DEVICE IS SIMPLIFIED AND ITS LOGICAL POSSIBILITIES ARE EXTENDED BY INCLUDING A MEMORY UNIT CONNECTED THROUGH A COMMUTATOR TO THE VERTICAL DEFLECTING PLATES OF THE CATHODE RAY TUBE. THE OUTPUTS OF THE MAGNETIC FIELD PICKUPS ARE CONNECTED TO THE INPUTS OF THE PICKUP COMMUTATOR. THE OUTPUT OF THIS COMMUTATOR IS CONNECTED THROUGH THE CONVERTER TO THE INPUTS OF THE MEMORY UNIT.

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USSR UDC 632.95

KRON, YE. M., POPOVA, M. N., STEPANOV, D. YE., KALABINA, A. V.

"Thiylation of Aorxynorbornenes"

Irkutsk, Khimiya aromat. i nepredel'n. soyedin.--sbornik (Chemistry of Aromatic and Unsaturated Compounds -- collection of works), 1971, pp 305-310 (from RZh-Khimiya, No 10, May 73, Abstract No 10N533 by T. G. Chekareva)

Translation: Compounds of general formula (I)

[R =Bu, Ph, MeCO, $(MeO)_2PS$, $(EtO)_2PS$, R' = aryl] are produced by thiylation of aroxynorbornenes. Examples: 5.5 g of PhSH is added by drops to 10 g of 4-cresoxynorbornene. Catalyst is HCl (gas). The mixture is held for 3 hours at 45-50°C, and 9.3 g of compound I is isolated by vacuum distillation (R = Ph, R' = $4\text{-}MeC_6H_4$), boiling point 162-5°C/0.01, $n^{20}D$ 1.5985, yield 63%. BuSH is added analogously, but at 85-90°C. Addition of $(MeO)_2PSSH$ and $(EtO)_2PSSH$ is done without a catalyst. The following type I compounds are synthesized (given are R, R', boiling point in °C/mm, $n^{20}D$, d_4^{20}, yield in %): MeCO,

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KRON, YE. M., et al., Khimiya aromat. i nepredel'n. soyedin.--sbornik, 1971, pp 305-310

2-MeC_6H_4, 145-8/0.03, 1.5585, 1.1464, 54; MeCO, 3-MeC_6H_4, 142-5/0.03, 1.5581, 1.1456, 69; MeCO, 4-MeC_6H_4, 160-2/0.03, 1.5608, 1.1424, 62.2; MeCO, 4-ClC_6H_4, 210-5/1, 1.5684, 1.1266, 69.6; Ph, 2-,eC_6H_4, 153-9/0.03, 1.6015, 1.1420, 56.5; Ph, 3-MeC_6H_4, 152-3/0.03, 1.6019, 1.1429, 59.7; Ph, 4-ClC_6H_4, 129-33/0.08, 1.5413, 1.112, 50.1; Ph, 4-BrC_6H_4, 172-4/0.08, 1.6184, —— , 54; $(MeO)_2PS$, 2-MeC_6H_4, —— , 1.5655, 1.1849, 95.5; $(MeO)_2PS$, 3-MeC_6H_4, —— , 1.5547, 1.1630, 98; $(MeO)_2PS$, 4-MeC_6H_4, —— , 1.5665, 1.2005, 94.4; $(MeO)_2PS$, α-naphthyl, —— , 1.5995, —— , 99; Bu, 2-MeC_6H_4, 142-7/0.06, 1.5465, —— , 62; Bu, 4-MeC_6H_4, 141-4/0.03, 1.5451, 1.0328, 65; Bu, 3-MeC_6H_4, 150-2/0.06, 1.5443, 1.1004, 67; Bu, 4-ClC_6H_4, 200-3/0.03, 1.5545, 1.3006, 60; $(EtO)_2PS$, 2-MeC_6H_4, —— , 1.5545, —— , 97.9; $(EtO)_2PS$, 4-MeC_6H_4 —— ,

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

KRON, YE. M., et al.,Khimiya aromat. i nepredel'n. soyedin.--sbornik., 1971, pp 305-310

1.5541, 1.1546, 99; $(EtO)_2PS$, 3-MeC_6H_4, ——, 1.5552, ——, 98.2; $(EtO)_2PS$, 4-ClC_6H_4, ——, 1.5619, ——, 97.8; $(EtO)_2PS$, 2-$MeCOCC_6H_4$, ——, 1.5549, ——, 99. Compounds I have acaracidal properties, but are not up to the accepted standards for activity. It is shown that the acidity of the corresponding thiol determines the ease with which the reaction takes place.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 632.95

KALABINA, A. V., BYCHKOVA, T. I., STEPANOV, D. Ye., KRON, V. A.

"Synthesis of New Physiologically Active Compounds Based on Aroxyethylenes"

V sb. Khimiya atsetilena (Chemistry of Acetylene--Collection of Works), Moscow, Nauka, 1972, pp 121-125 (from RZh-Khimiya, No 6 (II), Abstract No 6N610)

Translation: Substances with the formula $CHXX'CH(OR')S(S)P(OR)_2$ (I) were synthesized and tested, (X, X', R, R', the boiling point °C/mm, d^{20}_4 and n^{20}_D are presented): Cl, Cl, Et, 2-MeC_6H_4, 140-5/0.03, 1.2674, 1.5540; Cl, Cl, Et, 4-MeC_6H_4, 160-2/0.07, 1.2748, 1.5540; Cl, Cl, Et, 3-MeC_6H_4, 133-6/0.02, 1.2500, 1.5498; Cl, Cl, Et, 4-ClC_6H_4, 154-9/0.05, 1.3593, 1.5632; Cl, Cl, Et, 2.4-Cl_2-C_6H_3, 157-162/0.04, 1.3923, 1.5672; Cl, Cl, Me, Ph, 140-2/0.04, 1.4100, 1.5772; Cl, Cl, Me, 4-ClC_6H_4, 150-7/0.03, 1.4310, 1.5812, H, Br, Et, Ph, --, 1.3535, 1.5680; Cl, Br, Et, Ph, --, 1.4153, 1.5700; Br, Br, Et, Ph, --, --, 1,5820; and also $CH_2ClCh(OPh)SCOMe$, boiling point 90-1°/0.1, melting point 41-2°; $Ch_2ClCH(OC_6H_4Me\text{-}2)SCOMe$, boiling point 91-3°/0.07, melting point 43°; $CHCl_2$-$CH(OPh)SC(S)NEt_2$, melting point 60-1°. The I reveals high activity with respect to the tetranychoidea superfamily and houseflies. The tests demonstrate that the adducts of vinyl esters of phenols with cyclopentadiene and

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

KALABINA, A. V., et al., V sb. Khimiya atsetilena, 1972, pp 121-125

its derivatives are significantly inferior to the compounds used at the present time with respect to fungicidal, insecticidal and acaricidal activity. The pesticidal activity of the adducts increases as a result of the addition of thyilating reagents.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC: 532.526

STEPANOV, E. A.

"Laminar Boundary Layer on a Plate and a Cone When a Homogeneous or Dissimilar Gas is Blown in at an Acute Angle to the Surface"

V sb. Teplo- i massoperenos. T. 1. Ch. 3 (Heat Transfer and Mass Transfer, Vol 1, Part 3--collection of works), Minsk, 1972, pp 136-140 (from RZh--Mekhanika, No 9, Sep 72, Abstract No 9B824)

Translation: The paper presents the results of numerical research done with the following values of oncoming nitrogen flow parameters: $M_e = 4$, $T_e = 288.16$ K, $\rho_e = 1.2$ kg·m^{-3}; $M_e = 7$, $T_e = 288.16$ K, $\rho_e = 1.2$ kg·m^{-3}; $M_e = 4$, $T_e = 750$ K, $\rho_e = 0.455$ kg·m^{-3}. Blow-in of nitrogen, helium and carbon dioxide is considered for two cases of power-law supply $(\rho v)_w = Ax^n$ where $n = -0.5$ and $n = 0$, which corresponds to a self-similar law of blow-in, to uniform blow-in on a cone, and to uniform blow-in on a plate. Sliding on the wall varied over a range of $0 \leqslant u_w \leqslant 1$, the conditions T_w = const or $q_w = 0$ were stipulated, as well as the condition of impermeability of the wall to the gas of the external flow in the case of blow-in of a dissimilar gas.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR UDC: 620.178.37

STEPANOV, G. A., KIVI, E. A.

"Method of Testing for Thermal Fatigue at Below-Freezing Temperatures"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1374-1376.

Abstract: The authors have developed a method for thermal fatigue testing during oscillations of temperature in the -196 to +20°C interval. Considering that the most probable method of formation of cracks is stress concentration, the tests were performed with notched specimens under constant loads. It is demonstrated that in the coordinates of stress versus the logarithm of the number of cycles, the dependence follows a straight line; with a base of 1000 cycles, the short-term strength of the specimen decreases by 15-20%.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC: 621.391:519.2

STEPANOV, E. Z.

"Noise Immunity of a Synchronization Channel in Secondary Time Multiplexing Equipment"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Transactions of the Moscow Institute of Railroad Transport Engineers) 1970, No. 365, pp 60-68 (from RZh-Radiotekhnika, No. 3, March 71, Abstract 3A47)

Translation: An expression is found for the probability of a drop in secondary synchronization as a function of the magnitude of fluctuation noise in the telephone channel of a radio relay line with pulse phase modulation. It is shown that the drop sets in after the primary synchronization. Three illustrations, bibliography of five. Author's abstract

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Pesticides

USSR UDC 632.934:633.31

POLEVSHCHIKOVA, V. N., Head of the Laboratory for Studying Food Crop Pests, and STEPANOV, E. A., Head of the Chemicotoxicological Laboratory of the Central Asian Plant Protection Institute

"Granulated Phosphamide (Rogor) to Control Alfalfa Shoot Pests"

Moscow, Zashchita Rasteniy, No 12, 1971, pp 17-18

Abstract: A procedure was developed at the Central Asian Plant Protection Institute for controlling sitona and aphids which are harmful to alfalfa shoots. Ten systemic preparations were tested including phosphamide, intrathion, siphos, keelval, and so on, of which the most effective was phosphamide. The method of preparing the compound, granulating it and applying it is described. Chemical and biological studies of the stability of the granulated phosphamide demonstrated that the amount of phosphamide in the granules after 9 months of storage drop insignificantly, and field testing showed that the stored granules were only 2 percent inferior to granules prepared immediately before application. The toxicity of the phosphamide stored in the plants lasted 40 to 45 days, but no residual phosphamide was detected during the harvest period.

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1/3 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--REARRANGEMENTS OF ADAMANTANE DERIVATIVES -U-

AUTHOR-(02)-GUTS, S.S., STEPANOV, F.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 434-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADAMANTANE, ELECTROLYSIS, METHANOL, BROMINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0818 STEP NO--UR/0062/70/000/002/0434/0439

CIRC ACCESSION NO--AP0119723

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2/3 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE KOCH REACTION IN CONCD. H SUB2 SO SUB4, THE CARBONIUM ION (I) FROM ADAMANTANE IS KINETICALLY INDEPENDENT AND REACTS VIA TRANSITION STATE II. IN ELECTROLYSIS IN MEOH, A SOLVATED ION IS FORMED AND, IN THIS ION, THE POS. CHARGE IS PARTLY TRANSFERRED TO THE O ATOM, ACCOUNTING FOR HINDRANCE OF HYDRIDE TRANSFER. THIS ION IS STABILIZED BY LOSS OF H PRIME POSITIVE TO FORM 3,METHOXYHOMOADAMANTANE; THE SAME TRANSITION STATE OCCURS IN PREPN. OF THE CARBOXYLIC ACID BY THE KOCH REACTION FROM 3,BROMO DERIVS. AND 1,BROMO DERIVS. IN WHICH A MIXT. OF 60-70PERCENT HOMOADAMANTANE,1,CARBOXYLIC ACID (III) AND 20-30PERCENT 1,(BROMOMETHYL)ADAMANTANE (IV) IS FORMED. IV DOES NOT ENTER THE KOCH REACTION AND IS FORMED IRREVERSIBLY FROM STABILIZATION OF THE CARBONIUM ION BY BR PRIME NEGATIVE AT THE METHYLENE GROUP. TO 70 ML CONCD. H SUB2 SO SUB4 WERE ADDED AT ROOM TEMP. SIMULTANEOUSLY 3 G 1,BROMOHOMOADAMANTANE IN HEXANE AND 8 ML HCO SUB2 H AND THE MIXT. KEPT 2 HR TO YIELD 63PERCENT III, M. 160-2DEGREES, AND 23PERCENT IV, M. 44-5.5DEGREES. 3,BROMOHOMOADAMANTANE SIMILAR GAVE 67PERCENT III AND 29PERCENT IV; 3,HYDROXYHOMOADAMANTANE GAVE 98PERCENT III, WHICH KEPT IN MECH WITH H SUB2 SO SUB4 OVERNIGHT, THEN KEPT WITH H SUB2 O 5 DAYS, GAVE 78PERCENT 3,ACETAMIDOHOMOADAMANTANE, M. 136-7DEGREES. THIS AND CONCD. HCL HEATED 2 HR GAVE 49PERCENT 1,(CHLOROMETHYL)ADAMANTANE, B SUB4 85-8DEGREES, AND 50PERCENT 3,HYDROXYHOMOADAMANTANE, M. 274-5DEGREES.

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CIRC ACCESSION NO--AP0119723 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--SIMILAR HYDROLYSIS, BUT WITH NAOH IN DIETHYLENE GLYCOL, GAVE IN 6 HR REFLUXING, 95PERCENT 3,AMINOHOMOADAMANTANE, 1,BROMOHOMOADAMANTANE IN MECH KEPT 1 DAY WITH CONCD. H SUB2 SO SUB4 GAVE 83PERCENT 1,ACETAMIDOHOMOADAMANTANE, M. 158-60DEGREES, WHICH, HEATED 2 HR WITH CONCD. HCL, GAVE 98PERCENT 1,CHLOROHOMOADAMANTANE, M. 163-5DEGREES, WHILE HYDROLYSIS, WITH NAOH IN DIETHYLENE GLYCOL 6 HR, GAVE 1,AMINOHOMOADAMANTANE. HOMOADAMANTANE,1,CARBONYL CHLORIDE HEATED WITH ALCL SUB3 AT 190DEGREES DECOMPD. TO 1,CHLOROHOMOADAMANTANE. AG SALT OF III TREATED WITH BR,CCL SUB4 AT 60DEGREES GAVE 12PERCENT 1,BROMOHOMOADAMANTANE. III AND HGO IN CCL SUB4 GAVE ON TREATMENT WITH BR AT 76DEGREES 1.5 HR 25PERCENT 1,BROMOHOMOADAMANTANE.

FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DOUBLE FRAGMENTATION OF AN ADAMANTANE RING -U-

AUTHOR-(04)-STEPANOV, E.N., SUKHOVERKHOV, V.D., BAKLAN, V.F., YURCHENKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 884-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADAMANTANE, AROMATIC CARBOXYLIC ACID, CATALYST, ZINC, THERMAL DECOMPOSITION, BROMINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2161 STEP NO--UR/0366/70/006/004/0884/0885

CIRC ACCESSION NO--AP0125744

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125744

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 1,3,BIS(BROMOMETHYL),5,7,DIBROMOADAMANTANE (I) WITH POWD. ZN GAVE 1,3,5,7,TETRAMETHYLENECYCLOOCTANE (II). BROMINATION OF II IN CCL SUB4 GAVE I. THE REACTION OF II WITH HBR GAVE 1,3,DIBROMO,5,7,DIMETHYLADAMANTANE. THE REACTION OF II WITH HCO SUB2 H IN 1PERCENT OLEUM GAVE 1,3,DIMETHYLADAMANTANE,5,7,DICARBOXYLIC ACID. CATALYTIC ALLENE TETRAMERIZATION GIVES 1,3,4,6,TETRAMETHYLENECYCLOOCTENE, NOT II, AS REPORTED BY I. WILLIAMS, ET AL., (1962). FACILITY: KIEV. POLITEXH. INST., KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DIFUNCTIONAL DERIVATIVE OF DIBENZOPYRENEQUINONE -U-

AUTHOR-(02)-STEPANOV, F.N., ZOSIM, L.A.

COUNTRY OF INFO--USSR

S

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 592-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, QUINONE, PHENANTHRENE, AROMATIC POLYCYCLIC HYDROCARBON, NITRATION, CHEMICAL REDUCTION, POLYMER, DYE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1408 STEP NO--UR/0366/70/006/003/0592/0594

CIRC ACCESSION NO--AP0112402

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112402

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITRATION OF 3,4,8,9,DIBENZOPYRENE,5,10,QUINONE (I) GAVE ITS DIAMINO DERIV., WHICH WAS REDUCED WITH NA SUB2 S TO THE DINITRO DERIV. (II) OF I, OF INTEREST IN THE SYNTHESIS OF COLORED POLYMERS. THE PREPN. OF II COULD ALSO BE ACHIEVED, BUT IN LOW YIELDS, BY REACTING I WITH H SUB2 NOH IN CONCD. H SUB2 SO SUB4 SOLN. CONTG. V SUB2 O SUB5.

UNCLASSIFIED

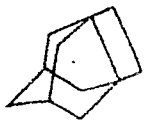
APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

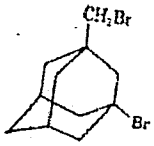
AP0042035 Abstracting Service: CHEMICAL ABST. Ref. Code

S 4170 UR 0366

89871s Photoisomerization of 3,7-dimethylenebicyclo[3.3.1]-nonane. Yurchenko, A. G.; Voroshchenko, A. T.; Stepanov, F. N. (Kiev. Politekh. Inst., Kiev, USSR). Zh. Org. Khim. 1970, 6(1), 189-90 (Russ). The irradn. of 3,7-dimethylenebicyclo[3.3.1]nonane in Et_2O soln. contg. also 4% "Cu complex" gave 92-6% tetracyclo[4.3.1.1^{4,8},0^{1,4}] undecane (I), the bromination of which without solvent gave 1-bromo-3-bromomethyl-adamantane (II).



(I)



(II)

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REEL/FRAME

19751932

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Acc. Nr. AP0041855 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code UR0366

S

89866u Adamantane and its derivatives. XXII. Synthesis of aldehydes of the adamantane series based on diethyl acetals. Stepanov, E. N.; Dovgan, N. I. (Kiev. Politekh. Inst., Kiev, USSR). *Zh. Org. Khim.* 1970, 6(1), 55-8 (Russ). The reaction of RCH_2OH (R in this abstr. is 1-adamantyl) with $Pb(OAc)_4$ and $HC(OEt)_3$ gave $RCH(OEt)_2$, which was condensed with $H_2C{:}CHOEt$ in the presence of $BF_3.Et_2O$ to give $RCH(OEt)CH_2CH(OEt)CH_2CH(OEt)_2$ and $RCH(OEt)CH_2CH(OEt)_2$ (I). The hydrolysis of I with AcOH-AcONa-H_2O mixt. gave $RCH(OEt)CH_2CH(OEt)_2$. Similarly, $RCH_2CH(OEt)_2$ (II) was converted to $RCH_2CH(OEt)CH_2CH(OEt)CH_2CH(OEt)_2$ and $RCH_2CH(OEt)CH_2CH(OEt)_2$, which was hydrolyzed to $RCH_2CH{:}CHCHO$. The pyrolysis of II or $RCH_2CH_2CH(OEt)_2$ on $MgHPO_4$–$Na_2S_2O_3$ mixt. at 250°/65–75 mm gave, resp., $RCH{:}CHOEt$ or $RCH_2CH{:}CHOEt$. CPJR

REEL/FRAME
19751736

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Acc. Nr. AP0041854

Abstracting Service: CHEMICAL ABST

9170

Ref. Code 4R0366

89874v Adamantane and its derivatives. XXI. α-Halo-substituted ketones and aldehydes of the adamantane series. Stepanov, F. N.; Isaev, S. D.; Vasil'eva, Z. P. (Kiev. Politekh. Inst., Kiev, USSR). *Zh. Org. Khim*, 1970, 6(1), 51-5 (Russ). The reaction of RCOCl (R is 1-adamantyl) with CH_2N_2, followed by decompn. with HBr or HCl gave $RCOCH_2X$ (X is Br or Cl); in the same way RCH_2COCH_2X was prepd. The reaction of 1-bromoadamant-3-ylcarbonyl chloride with CH_2N_2, followed by treatment with HCl gave 3-chloro-1-adamantyl bromomethyl ketone. Similarly, 3-bromomethyl-1-adamantyl bromomethyl ketone was prepd. The reaction of RCOCl with $EtOMgCMe(CO_2Et)_2$ followed by ketonic cleavage gave $RCOEt$, which was brominated in EtOH to $RCOCHBrMe$. Bromination of RCOMe with excess Br gave 3-bromoadamantyl dibromomethyl ketone. The bromination of RCH_2CHO gave successively $RCHBrCHO$ and $RCBr_2CHO$.

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REEL/FRAME

19751735

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC:621.791.052:669.14.018.8:620.17

GURDZINSKIY, B. V., STEPANOV, G. A., YATSKOV, A. P., SKOL'TSOV, V. I.

"Influence of Pore Penetration on Strength of Welded Joints of Kh18N10T Steel at Cryogenic Temperatures"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 73, pp 31-33

Abstract: Failure of welding heat to penetrate the depth of a seam produces a stress concentrator on the cold side of the seam which can be very effective. Specimens of Kh18N10T sheet steel were tested at -196° C to determine the influence of stress concentration on the properties of this metal at this temperature. The reduced ductility of the welded seam at this temperature significantly increases the influence of penetration failures on the strength of a seam. Strength drops by 10-15%. Local failures serve as centers of formation and development of fatigue cracks.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Organ and Tissue Transplantations

USSR

UDC 616.13-089.843

KNYAZEV, M. D., LEMENEV, V. L., and STEPANOV, G. A., Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Autotransplantation of the Aorta and Its Main Branches"

Leningrad, Vestnik Khirurgii imeni I. I. Grekov, No 10, 1971, pp 93-95

Abstract: The authors describe a combined vascular prosthesis consisting of a segment from one of the patient's arteries implanted at the site of physiological flexion (e.g., inguinal ligament) and a synthetic graft inserted in an immobile portion of the blood vessel. This technique prevents kinking, retains the advantages of endarterectomy by eversion, and shortens the prosthesis. Such prostheses were implanted in 20 patients with atherosclerosis, arteritis, etc. and the immediate results were good: complete restoration of circulation in the extremity and patency of the prosthesis. Follow-up of 14 patients for over 2 years showed that all continued to hold their jobs, and there were no signs of ischemia in the extremity. The prosthesis became thrombosed on one woman because it was compressed during pregnancy.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 539.376:66-974

STEPANOV, G. A., BURTSEV, YE. I., and KOROLIKHINA, R. A.

"Creep of Kh14G14N3T Steel in Liquid Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 4-7

Abstract: The accumulation of plastic flow of Kh14G14N3T steel with a composition of 0.07% C, 0.46% Si, 0.006% S, 0.017% P, 13.4% M, 13.8% Cr, 3.05% Ni, and 0.25% Ti at -196° C was investigated under conditions of prolonged loading. Its properties in the presence of stress concentrators and heat-cooling cycles were also considered. The results of the tests shown that Kh14G14N3T can be recommended for statically loaded welded structural elements which must operate for a long time at low temperatures.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Surgery

USSR

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UDC 616.132+616.13]-89.28-07:616.151.5-07

PETROVSKIY, B. V., KNYAZEV, M. D., KOBLOV, L. F., STEPANOV, G. A., and SMIRNOVA, L. A., Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Health USSR

"Hemostasis After Repair Operations on the Aorta and Major Arteries Using Electroconductive Prostheses"

Moscow, Kardiologiya, No 4, 1971, pp 9-14

Abstract: Vascular prostheses woven with silver threads were implanted in 30 patients with occlusion (due to atherosclerosis and endarterteritis) of the terminal portion of the aorta and iliac arteries or aneurysms of the aorta). A like number of patients with similar lesions received nonconducting terylene prostheses. Hypercoagulability was characteristic of both groups of patients before surgery because of high fibrinogen concentration, lowered fibrinolytic activity, increased antifibrinolysin activity, and slow blood flow. Postoperatively, none of the patients who received an electroconductive prosthesis required anticoagulant and fibrinolytic therapy, whereas most of those who received a terylene prosthesis showed signs of hypercoagulability, and several developed thrombosis despite the administration of anticoagulants.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 621.643.001.24

KURANOV, B.A., STEPANOV, G.A., Scientific Research Institute of Cryogenic Machinery

"Calculation of Pipeline Flange Connections for Low-Temperature Liquids"

Moscow, Stroitel'stvo Truboprovodov, No 5, May 1971, pp 24-25

Abstract: Flange connections of pipelines intended for the transportation of low-temperature liquids must possess high strength and must be leak proof. When the parameters of flange connections are calculated, account is usually taken only of the internal pressure and of the axial forces in the pipeline. Research has shown, however, that temperature deformations must also be taken into account. If these deformations are not taken into account, the service life of the pipeline facility cannot be calculated correctly. 4 figures, 5 bibliographic entries.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 539.376:66-974

STEPANOV, G. A., BURTSEV, YE. I., and KOROLIKHINA, R. A.

"Creep of Kh14G14N3T Steel in Liquid Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 4-7

Abstract: The accumulation of plastic flow of Kh14G14N3T steel with a composition of 0.07% C, 0.46% Si, 0.006% S, 0.017% P, 13.4% M, 13.8% Cr, 3.05% Ni, and 0.25% Ti at -196° C was investigated under conditions of prolonged loading. Its properties in the presence of stress concentrators and heat-cooling cycles were also considered. The results of the tests shown that Kh14G14N3T can be recommended for statically loaded welded structural elements which must operate for a long time at low temperatures.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 620.17:669.71'5'721:620.176.251.1

BARANOV, N. S., KALININA, A. P., STEPANOV, G. A., and SHLYAMNEVA, I. A.

"Dependence of Mechanical Properties of Alloys in the System Al-Zn-Mg on Aging Modes"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 32-34

Abstract: Results are presented from an investigation of the influence of heat treatment and preliminary natural aging modes before artificial aging on the mechanical properties of alloys in the Al-Zn-Mg system at 20° and -196°C. It is concluded that the heat treatment modes for alloys in the Al-Zn-Mg system which will be used at low temperatures can be selected so as to provide satisfactory properties at +20°C, since the properties at -196°C vary directly with the properties at +20°C. Artificial aging at 100°C for four hours followed by 7-9 hours at 150°C, with subsequent natural aging for 24 hours or more results in rather high strength properties and satisfactory plastic properties at -196°C.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 539.4.015

YUSHCHENKO, K. A., STARTSEV, V. I., IL'ICHEV, V. Ya., MON'KO, G. G., LIVSHITS, L. A., KAPLAN, L. I., STEPANOV, G. A., and GRUDZINSKIY, B. V., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences, UkrSSR

"Low-Temperature Properties of Austenitic Steels"

Kiev, Problemy Prochnosti, No 10, Oct 70, pp 113-115

Abstract: A study was made of the mechanical properties of some steels of industrial melts destined for use at temperatures down to -269°C. A low carbon content was characteristic for the investigated steels, and some were also alloyed with nitrogen. The 21-16-8-N type stable-austenitic steel had the best strength properties and smallest reduction in plasticity and toughness at reduced temperatures.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

1/2 012 UNCLASSIFIED

TITLE--OLEFINS FROM N BUTANE BY CATALYTIC DEHYDROGENATION -U- PROCESSING DATE--23OCT7(

AUTHOR-(05)-STEPANOV, G.A., TSAILINGOLD, A.L., PILIPENKO, F.S., SOBOLEY, V.M., BORESKOV, G.K.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,800,063

DATE PUBLISHED--16APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEHYDROGENATION, BUTANE, CHEMICAL PATENT, METAL OXIDE, CATALYST ACTIVITY, BUTENE, BUTADIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1004

STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0119873

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

2/2 012 UNCLASSIFIED

CIRC ACCESSION NO--AA0119873 PROCESSING DATE--23OCT7C

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATALYTIC OXIDATIVE DEHYDROGENATION OF N BUTANE AT 550-650DEGREES OVER MO AND-OR W OXIDE CONTG. AT LEAST ONE OF THE OXIDES OF CR, MN, FE, NI, OR CO GAVE SIMILAR TO 5 WT. PERCNET N BUTENES AND 10-20 WT. PERCENT BUTADIENE. THUS, ADDN. OF NI(NO SUB3) SUB3 IN H SUB2 O TO (NH SUB4) SUB6 MO SUB7 O SUB24 IN H SUB2 O AND HEATING THE PPT. AT 400-500DEGREES GAVE A CATALYST WITH 1:2 MO-NI AT. RATIO. N BUTANE, O, AND H SUB2 O VAPOR AT A 1:0.25:10 MOLAR RATIO AND 590DEGREES REACTED IN THE PRESENCE OF 15 ML CATALYST TO GIVE 4.5 WT. PERCENT N BUTANES AND 21 WT. PERCENT BUTADIENE.

FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF MONOMERS FOR SYNTHETIC RUBBER.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC 669.973:669.14.018.8

STEPANOV, G. A., GRUDZINSKIY, B. V., and SHLYAMNEVA, I. A.

"Properties of Kh18N10T and Kh21N5AG7 Steels under Load at -196°C"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 13-16

Abstract: The results of an investigation of the properties of Kh18N10T and Kh21N5AG7 steels under prolonged (up to 2000 hours) load at -196°C are presented. Test procedures are briefly described. The mechanical properties are presented in a table. The effect of prolonged loading on the mechanical properties, plastic deformation, and stress relaxation of steels in service was determined. It was established that plastic deformation of Kh21N5AG7 steel during prolonged tests does not increase with time. The relaxation of this steel is substantially higher than that of Kh18N10T steel. Kh21N5AG7 steel appears to be an effective substitute for Kh18N10T steel in structures subjected to negative temperatures, and also has higher strength properties than the latter. Time variations of the plastic deformation of Kh18N10T steel are shown in a graph. 2 figures, 2 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

UNCLASSIFIED

TITLE--A NEW TECHNIQUE OF FORMING AN AUTOBIOLOGICAL LINING FOR THE PREVENTION OF THROMBOGENESIS ON PROSTHESES OF THE CARDIOVASCULAR SYSTEM

PROCESSING DATE--17JUL70

AUTHOR--PETROVSKIY, B.V., SHUMAKOV, V.I., STEPANOV, G.A., PLOTKIN, L.L.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 1, PP 69-74

DATE PUBLISHED--------70

33
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38

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARDIOVASCULAR SYSTEM, PROSTHESIS, THROMBOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1977/1711

STEP NO--UR/0531/70/000/001/0069/0074

CIRC ACCESSION NO--APO044856

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

Acc. Nr: AP0044856 Ref. Code: UR0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1, pp 69-74

A NEW TECHNIQUE OF FORMING AN AUTOBIOLOGICAL LINING FOR THE PREVENTION OF THROMBOGENESIS ON PROSTHESES OF THE CARDIOVASCULAR SYSTEM

B. V. Petrovskiy, V. I. Shumakov, G. A. Stepanov, L. L. Plotkin

The authors propose a new technique of forming an autobiological lining on prostheses of the cardiovascular system, which consists in that on the electroconducting prosthesis in vitro and in the blood flow a positive electric potential is given, conducive to a rapid precipitation of trace elements and proteins of the blood. On the prosthesis there is formed a firmly-bound autobiological lining preventing the formation of thrombi. The authors conducted 52 experiments in vitro and 30 acute experiments with introduction of an electric potential on the prosthesis in the blood stream. The article contains a detailed description of the technique of forming the lining, as well as the method of recording of the autobiological lining. The biochemical and morphological composition of the lining formed by the galvanic technique was studied.

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REEL/FRAME 19771711

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

STEPANOV, G. K.

UDC 621.352.6.035.2

"Meniscus Film Mechanism for the Operation of a Gas Diffusion Electrode in Carbonate Melts. I. Flat Lyophillic Electrodes for Regular and Irregular Structures"

Tr. In-ta elektrokhimii. Ural'sk. nauch. tsentr AN SSR (Works of the Institute of Electrochemistry, Ural Scientific Center, Academy of Sciences USSR), Vyp 18, 1972, pp 129-137 (From Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 1225 by V. S. Levinson)

Translation: The principles were examined for determining D in flat lyophillic electrodes in a porous environment having a regular structure, for the unhindered flow and discharge of reagents and products to the peripheral wetting zone. On the basis of these considerations, a model structure was proposed having the regularly distributed cylindrical pores most convenient for mathematical treatment.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

STEPANOV, G.N.

COMMUNICATIONS

JPRS 54339

29 October 1971

UDC: 621.395.4:621.315.212

NEW MULTICHANNEL COAXIAL CABLE EQUIPMENT

[Article by G.G. Borodzek, et al.*: "Improved Multichannel Communications Apparatus for K-1920 Coaxial Cable", Moscow, Elektrosvyaz', Russian, No 8, August 1971, pp 24-34]

General Information

The K-1920 apparatus developed from 1955-1960 inclusive has been used widely in communications networks in the Soviet Union. It makes it possible to organize up to 1,920 channels of tonal frequency (tch) or 300 channels of tch for simultaneous two-directional television transmission over two pairs of coaxial KMB-4x2.3/9.4 mm cable. Such channels were used for telephone communications, telegraph and facsimile, for the transmission of data, broadcasting, newsprint facsimile, etc.

Experience in the operation of this system on long main lines has brought out shortcomings of some apparatus and the need for their improvement in order to raise the stability of the characteristics and reliability of communications channels. This is especially important for lines longer than 2,000 to 3,000 kilometers with long sections between attended repeater stations.

Under the conditions prevailing in our country with its huge territory and with a constantly increasing volume of data being transmitted, it has become necessary to organize large bands of communications channels for distances of up to 10,000 to 12,000 km. It was necessary to build powerful main lines using combination cables to satisfy channel requirements. These cables contain a greater number of coaxial pairs (6 or 8 instead of 4 as in the KMB-4 cable), 4 or 6 coaxial pairs of smaller 1.2/4.4 mm diameter multiplexed by the K-300R distribution system, and 0.9 mm diameter balanced pairs for service communications, K-24 distribution system and telemechanics.

* A. S. Blokhin, A. Ye. Manushkin, A.G. Merkulov, G.N. Stepanov, N. Ye. Lugovskoy, G. K. Vasil'yev

[I - USSR - F]

STEPANOV, G.N.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

STEPANOV, G. N., TROYANOV, K. L. UDC 624.07:534.1

"On the Problem of Determining the Shapes of Oscillations of Rod Systems"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 102-104 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V273)

Translation: The familiar assumption in the literature of the presence of a phase difference under forced oscillations of continual systems due to the effect of internal resistance of the material is verified experimentally. The experiments were made on reinforced concrete and polymer rods for high-frequency perturbations (35 and 83 Hz). A. G. Barchenkov.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203130010-9

USSR

UDC: 621.316.925.4

BOCHKAREV, V. N., STEPANOV, G. N.

"Direct-Current Protective Relay with Magnetically Controlled Contacts"

USSR Author's Certificate Number 307459, filed 29/03/69, published 26/08/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A316 P)

Translation: The authors suggest a direct-current protective relay using magnetically controlled contacts placed on the current-carrying line of the sector being protected and connected in series with charging resistors in each stage of the time-fixing RC circuit to produce an inversely dependent ampere-second characteristic. In order to simplify the circuit, the magnetically congrolled contacts are located in a plane perpendicular to the axis of the conductor at distances directly proportional to the current passing through the conductor.

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TITLE--CONSTRUCTION MATERIAL KAPROLON V -U- PROCESSING DATE--13NOV70

AUTHOR-(02)-STEPANOV, G.P., IVANOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 75-6

DATE PUBLISHED--------70

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

TOPIC TAGS--POLYMERIZATION, CAPROLACTAM, CONSTRUCTION MATERIAL, ABRASION RESISTANCE/(U)KAPROLON V CAPROLACTAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1072

STEP NO--UR/0303/70/000/002/0075/0076

CIRC ACCESSION NO--AP0134761

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CIRC ACCESSION NO--AP0134761 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRODUCED BY THE LOW TEMP. POLYMN. OF CAPROLACTAM IN THE PRESENCE OF ALKALIES AS THE CATALYSTS AND ACETYLCAPROLACTAM AS THE ACTIVATOR, WAS USED AS A REPLACEMENT FOR BRONZE OR CAST IRON PARTS IN CENTRIFUGAL AND GEAR PUMPS. I CANNOT BE USED ABOVE 70DEGREES BECAUSE IT SOFTENS, HOWEVER AT ROOM TEMP. IT RESISTS BETTER THE ABRASIVE ACTION OF PIGMENT DISPERSIONS THAN METALS. I CANNOT BE USED FOR PUMPING 90PERCENT H SUB2 SO SUB4 OR 4PERCENT HNO SUB3 SOLN., BUT IS RESISTANT TO ORG. SOLVENTS (XYLENES, BU ACETATE, LIGROIN, ETC.).

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USSR

UDC 534.012

STEPANOV, G.V. (Kiev), Institute of Strength Problems, Academy of Sciences, Ukrainian SSR

"Concerning the Rate of Propagation of Elastico-Plastic Waves in Metals"

Kiev, Problemy Prochnosti, No 2, 1971, pp 109-112

Abstract: The article deals with the influence of small plastic deformations and the irreversible energy losses connected with them, upon the rate of propagation of a plastic shock wave in the range of pressures corresponding to an elastico-plastic state. The conclusion is arrived at that a change of the resistance of the material to plastic deformation substantially affects the rate of propagation of a plastic shock wave in the region of small elastico-plastic deformations, which is equal to the hydrodynamic velocity of sound only in the special case of an ideal elastico-plastic medium without hardening. 2 figures, 5 bibliographic entries.

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USSR

UDC 620.178.72:534.012

PETUSHKOV, V. G., STEPANOV, G. V., Kiev

"Certain Regularities in the Propagation of Longitudinal Elastic Waves in Rods"

Kiev, Problemy prochnosti, No. 1, 1971, pp 78-81

Abstract: Certain regularities involved in the propagation and interaction of elastic waves in cylindrical rods subjected to tensile impact by a solid body are studied. The dependence of the form and amplitude of waves in a smooth, semi-infinite rod of finite length on velocity of impact is produced with various ratios of rod mass to impacting body mass. The experimental data agree well with calculated data. The conditions at the point where the diameter of a stepped rod changes with a considerable difference in cross-sectional area differ from the theoretical conditions, resulting in stress redistribution in the reflected and transmitted waves. The one-dimensional theory of a longitudinal impact, which does not consider contact effects, allows the form and amplitude of waves excited in rods by a tensile shock to be calculated with accuracy acceptable for practical purposes.

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Acc. Nr: AP0050041 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0109

105051g Pressure sensitivity of Schottky diode current. Elinson, M. I.; Pokalyakin, V. I.; Polyakova, A. L.; Stepanov, G. V.; Shklovskaya-Kordi, V. V. (Inst. Radiotekh. Elektron., Moscow, USSR). *Radiotekh. Elektron.* 1970, 15(1), 210-12 (Russ). The effect of a const. or alternating pressure from corindon or glass needles on Shottky diodes obtained by sputtering of a Au film on *n*-Si was studied. The mechanism of current change is discussed, and the role of modifications of surface center states is pointed out.

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USSR

GOGISH, L. V., STEPANOV, G. Yu.

"Quasi-univariate Theory of Interaction of a Turbulent Wake with a Supersonic Flow in a Channel and a Jet"

Nauch. Tr. In-t Mekh. Mock. Un-ta, [Scientific Works of the Institute of Mechanics, Moscow University], 1971, No 11, pp 18-34. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B426 by the authors).

Translation: An approximate integral method is described for calculation of the interaction of a flat and axisymmetrical turbulent wake with a stream in a channel or jet, consisting of integration of a system of ordinary first order differential equations, two of which describe the flow in a single-parameter turbulent wake, while the others describe the flow in a univariate or quasi-univariate supersonic nonviscous flow (jet). The course of the interaction is fully or partially described by a special solution of this sytem, passing through a singular point corresponding to the constricted cross-section (throat) or the viscous layer. The flat flow in the near wake behind the edge of a plate, around which a limitless supersonic stream and a stream of limited transverse size flow are studied as applications, as well as the flow in a pseudojump in a channel of constant width. One empirical constant is used in the law of friction (common for all flows studied Mach numbers M=1.5-4), and the results of calculation agree satisfactorily with independent experimental data.

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USSR

STEPANOV, I. A.

"Fourth International Congress on Metal Corrosion"

Moscow, Zashchita Metallov, Vol 6, No 2, Mar-Apr 70, pp 251-253

Abstract: The Fourth Regular Congress on Metal Corrosion was held in Amsterdam (Holland) from 7 to 14 September 1969. The congress was attended by 774 scientists representing 39 countries, including 29 participants from the USSR. The program included two main topics: studies of corrosion processes and protection against corrosion. At the twelve sections the participants heard 129 reports. There were no reports on sea water corrosion and corrosion of underground pipelines. These subjects were discussed at specialized conferences in Athens and London. The 4 plenary lectures on the main topics were delivered by Professors Benard, Staley, Main, and Kesche. The main features of the presentations on present-day developments in metal corrosion were: greater volume of research in corrosion cracking of high-strength materials under extreme conditions of potential application; detailed studies in growth kinetics, composition, and structure of oxide layers on heat-resistant materials at high temperatures in gaseous media; wide application of new methods in corrosion studies to establish the relationship of corrosion and electrochemical properties of alloys with their

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STEPANOV, I. A., Zashchita Metallov, Vol 6, No 2, Mar-Apr 70, pp 251-253

fine structure to serve as a basis for the development of new materials with greater corrosion resistance; improvement of methods for corrosion testing as applied to specific types of corrosion. These features were most completely reflected in the two sections "Effects of Mechanical Factors on Corrosion" and "High-Temperature Oxidation." Uhlig (USA) summarized his latest experimental data on corrosion cracking, including those of the conference held in Ohio State University in September 1967. The section "Effects of Mechanical Factors on Corrosion" covered 21 reports. Braun (USA) established the independence of pH, in a propagating crack, of the steel's composition and the pH of the solution and noted the thermodynamic regions of cracking and protection of steels as a function of the redox-potential of the medium. Prof. Uhlig discussed prerequisites for corrosion cracking. Wright and Goddar (Canada) reported on new corrosion testing methods. Prof. Benard analyzed present-day methods for studying the mechanism of adsorption processes on the surface of solids from the gas phase. The congress established two new sections, "Effect of Radiation on Corrosion" and "Microstructure and Corrosion." From the viewpoint of kinetics of local and selective corrosion, data were presented on the chemical activity of crystallographic planes by O. P. Arora and E. Metzer (USA) for aluminum and by B. A. Movchan and

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STEPANOV, I. A., Zashchita Metallov, Vol 6, No 2, Mar-Apr '70, pp 251-253

L. N. Yagupol'skiy (USSR) for nickel. A number of reports discussed application of passivation as a method of protection. Kitamura and Suzuki (Japan) reported on the kinetics of pitting corrosion of stainless steel. Colbel and Schultz (West Germany) analyzed the aspects of economics of protection using the chemical industry as an example. A resolution was adopted to hold the next (Fifth) congress in 1972 in Japan.

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USSR

STEPANOV, K. M., All-Union Scientific Research Institute of Phytopathology, Bol'shyye Vyazemy, Moskow Oblast'

UDC 632.9

"Forecasting Epiphytotics"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 545-551

Abstract: The complex problem of forecasting epiphytotics consists of three important stages. The first stage, covering many years, is aimed at fighting diseases by determining the chemical and technical requirements for the preliminary period and planning organizational, economic, and technological measures accordingly. The criteria for this stage may include the appearance of new aggressive races of pathogens, changes in the amounts of chemicals used for crop protection, increased irrigation, and fluctuations of solar activity. The second stage is seasonal long-range prognosis, drawing up definite plants for combating diseases. This stage takes weeks and months and forecasts the final intensity of development of diseases or crop losses in the coming season. It requires determination of the scope of the initial infectious outbreak, the distribution pattern of spores, conditions of the infection, its critical period, and the predisposition of plants. The third stage, short-term fore-

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STEPANOV, K. M., Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 545-551

casting, determines the actual tactics of fighting diseases. Here it is vital to establish the primary infection (by systematic analysis of air for pollution), the date of infection and other pertinent factors which are signals for spraying with fungicides. Organized collaboration of phytopathologists and meteorologists, as well as mathematicians and engineers, is urged.

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UNCLASSIFIED

TITLE--STABILITY OF A FINITE PRESSURE PLASMA WITH AN ANISOTROPIC ELECTRON VELOCITY DISTRIBUTION -U-

PROCESSING DATE--04DEC70

AUTHOR-(02)-YEGORENKOV, V.D., STEPANOV, K.M.

COUNTRY OF INFO--USSR

SOURCE--UKRAINS'KII FIZICHNII ZHURNAL VOL. 15, FEB. 1970, P. 235-330

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA STABILITY, PLASMA WAVE, LONGITUDINAL MAGNETIC FIELD, PHASE VELOCITY, THERMAL EXCITATION, ELECTRON, ION, LARMOR RADIUM, CYCLOTRON FREQUENCY, PLASMA OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1459

STEP NO--UR/0185/70/015/000/0325/0330

CIRC ACCESSION NO--AP0112453

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CIRC ACCESSION NO--AP0112453 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF THE STABILITY OF A HOT ELECTRON COLD ION PLASMA SUBJECTED TO FINITE PRESSURES AND HAVING AN ANISOTROPIC ELECTRON VEOLCITY DISTRIBUTION FUNCTION. DISCUSSED SPECIFICALLY ARE PLASMA WAVES WHOSE PHASE VELOCITY ALONG A LONGITUDINAL MAGNETIC FIELD IS SUBSTANTIALLY LOWER THAN THE THERMAL VELOCITY OF THE ELECTRONS BUT IS SUBSTANTIALLY HIGHER THAN THE THERMAL VELOCITY OF THE IONS WHILE THE WAVELENGTH IS MUCH GREATER THAN THE LARMOR RADIUS OF THE IONS. IT IS FOUND THAT INSTABILITIES AT FREQUENCIES MUCH HIGHER THAN THE CYCLOTRON ION FREQUENCY MAY DEVELOP IN PLASMAS OF THIS TYPE. UNSTABLE OSCILLATIONS HAVE THE FORM OF WHISTLES AND NONMAGNETIC ION ACOUSTIC OSCILLATIONS WHEN THE PLASMA IS ISOTROPIC.

FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, FIZIKO-TEKHNICHNII INSTITUT, KHARKOV, UKRAINIAN SSR.

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USSR

UDC: None

KALADZE, T. D., LOMINADZE, D. G., and STEPANOV, K. N.

"Spectra of Extraordinary Cyclotron Waves in a Metal"

Leningrad, Fizika Tverdogo Tela, No 11, 1973, pp 3312-3317

Abstract: This is a theoretical investigation of the dispersion of extraordinary electronic cyclotron waves in a degenerate Fermi gas of charged particles -- electrons, in this case -- with an isotropic dispersion law. Results are given for the numerical solution of the dispersion equation for these waves in a broad interval of variation of the wave vector. These results are plotted in the form of curves for various values of the parameter β, equal to the ratio of the electron energy density to the magnetic field energy density. Graphs of the frequency of the waves as a function of the wave vector indicate the frequency to be oscillatory, the result of the unevenness of the distribution function for a degenerate Fermi gas. The parameters of this oscillation are investigated.

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USSR

UDC: 533.951

KITSENKO, A. B., STEPANOV, K. N.

"Parametric Excitation of Ion-Acoustic Oscillations of a Plasma in an Alternating Electric Field and a Steady Magnetic Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 7, Jul 73, pp 1422-1425

Abstract: The authors develop a theory of parametric excitation of ion--acoustic oscillations of a strongly nonisothermal plasma ($T_e \gg T_i$) in an alternating electric field $E = E_0 \sin \omega_0 t$ parallel to a steady magnetic field B_0. This instability can occur under experimental conditions and may be responsible for an experimentally observed anomalously rapid plasma heating. Short-wave oscillations are considered for which the nonhomogeneity of the plasma and of the electromagnetic field of the pumping wave can be disregarded. Formulas are derived and analyzed for the frequencies and damping constants of the oscillations with resonance in one or more branches. Both fast and slow waves are considered.

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USSR

KITSENKO, A. B., PANKRATOV, I. M., STEPANOV, K. N. (Physicotechnical Institute of the Ukrainian Academy of Sciences)

"Nonlinear Stage of Excitation of Monochromatic Plasma Oscillations in a Magnetic Field by a Charged-Particle Beam"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; January 1974, pp 166-75

Abstract: The authors consider the excitation of monochromatic longitudinal plasma oscillations in a magnetic field by a beam of oscillators, or charged particles, traversing the plasma parallel to the magnetic field with a constant velocity, possessing identical Larmor radii and uniformly distributed with respect to azimuthal angle. For "glancing" waves the major mechanism leading to oscillation saturation is the disappearance of resonance between the wave and particle due to variation of the beam particle velocity component along the magnetic field induced by the oscillation field. For oscillations propagating perpendicularly to the magnetic field, saturation of the oscillations is due to variation of the transverse velocity and of the azimuthal angle of the beam particles. The oscillation amplitudes under nonlinear conditions are evaluated for all of these cases.

The article includes 43 equations. There are 17 references.

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USSR

KALADZE, T. D., LOMINADZE, D. G., and STEPANOV, K. N., Institute of Physics of the Academy of Sciences Georgian SSR, Tbilisi, and Khar'kov State University imeni A. M. Gor'kiy

"Spectra of Ordinary Cyclotron Waves in Metals"

Leningrad, Fizika Tverdogo Tela, Vol 15, vyp 1, Jan 73, pp 119-122

Abstract: The article gives results of detailed numerical calculations of the spectra of ordinary cyclotron waves in a degenerate Fermi gas of charge carriers with the square isotropic dispersion law $\mathcal{E} = p^2/2m$. The first fifteen natural frequencies are plotted as a function of the ratio of the Larmor radius to the wavelength for various values of the parameter $\beta \geqslant 10$ (β is the ratio of the electron energy density to the magnetic field energy density).

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USSR UDC 533.9

KITSENKO, A. B., PANCHENKO, V. I., and STEPANOV, K. N., Physico-Technical Institute of the Academy of Sciences, USSR

"Low-Frequency Parametric Instabilities of Plasma in a Variable Electric Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, October 1973, pp 1591-1598

Abstract: This article examines non-resonance parametric instability of plasma in a variable electric field, whose frequency is on the order of the lower hybrid frequency ω_{LH} or slightly exceeds it. The authors find the increments of growth in the hydrodynamic oscillations of a "cold" plasma with a frequency on the order of ω_{LH}, ion-sound and electron-sound oscillations the case in which the drift velocity of the electrons relative to the ions in a direction perpendicular to the magnetic field is greater than the thermal velocity of the ions but less than the thermal velocity of the electrons. The max-

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KITSENKO, A. B., et al., Ukrainskiy Fizicheskoy Zhurnal, Vol 18, No 10, Oct 73, pp 1591-1598

imal increment of the growth of these oscillations is on the order of ω_{LH}. The authors divide this article into several parts and give a detailed description in each. They first discuss the dispersion equation and go onto consider hydrodynamic oscillations. Ion sound and electron sound are studied separately. The article contains 10 bibliographic references.

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REEL # 31
SLYSH, V.I.
to
STEPANOV, K.N.

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