"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC: 534.852.2

RALKO, A. V., KURSENKO, I. V., MARCHUK, K. I., GAVRISH, A. P., KOVESHNIK, B. G., "Kiev "Order of Lenin" Polytechnical Institute imeni the Fiftieth Anniversary of the Great October Socialist Revolution

"A Method of Making Ferrite Magnetic Heads"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317169, Division C, Filed [illegible] May 7[illegible], published 7 Oct 71, p 184

Translation: This Authors' Certificate introduces a method of making ferrite magnetic heads by adding a vitrifying material in the working gap between ferrite cores, and heating it to the vitrification point. As a distinguishing feature of the patent, the manufacturing process is simplified by impregnating a porous material such as ash-free filter paper with the vitrifying material, drying, and placing a sheet of the impregnated material between the ferrite cores.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 037

TITLE--ACCEPTOR ROLE OF MOLYBDENUM IN AN ALLOY WITH NICKEL -U-

AUTHOR-(04)-KALINOVICH, O.F., KOVENSKIY, I.I., SMOLIN, M.D., STATSENKO, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 653-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MOLYBDENUM CONTAINING ALLOY, NICKEL ALLOY, IONIZATION, ELECTRON ACCEPTOR, ELECTRON DONOR, NICKEL ISOTOPE, MOLYBDENUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0341 STEP NO--UR/0126/70/029/003/0653/0655

CIRC ACCESSION NO--AP0126097

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 037 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126097

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING RADIOACTIVE PRIME63 NI AND PRIME99 MO AND THE METHOD OF ELECTRON TRANSFER, THE SIGN AND IONIZATION DEGREE OF MO ATOMS IN THE ALLOY NI,MO 20 AT. PERCENT AT 950-1300DEGREES WERE DETD. EQUATIONS WERE OBTAINED FROM THE TEMP. DEPENDENCE OF MO AND NI DIFFUSION COEFFS. THE FOLLOWING VALUES WERE DETD. FOR THE EFFECTIVE CHARGE OF THE MIGRATING IONS, TAKING INTO CONSIDERATION ALL FORCES WHICH MAY ACT ON THE IONS DURING ELECTRON TRANSFER FOR NI AND MO (1ST AND 2ND FIGURES, RESP.): AT 950DEGREES 38.8, NEGATIVE 9.90 ESU, 2.95 TIMES 10 PRIME NEGATIVE10, 4.05 TIMES 10 PRIME NEGATIVE10 CM PRIME2-SEC; AT 1050DEGREES 37.5, NEGATIVE 9.45 ESU, 1.29 TIMES 10 PRIME NEGATIVE9, 1.86 TIMES 10 PRIME NEGATIVE9 CM PRIME2-SEC; AT 1150DEGREES 36.3, NEGATIVE 8.96 ESU, 5.30 TIMES 10 PRIME NEGATIVE9, 6.83 TIMES 10 PRIME NEGATIVE9 CM PRIME2-SEC; AT 1300DEGREES 33.5, NEGATIVE 8.23 ESU, 2.86 TIMES 10 PRIME NEGATIVE8, 3.47 TIMES 10 PRIME NEGATIVE8 CM PRIME2-SEC. THE VALUES OF THE EFFECTIVE CHARGE FOR NI AND MO INDICATE A DONOR ACCEPTOR INTERACTION. FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--STATE OF NICKEL ATOMS IN A NICKEL MOLYBDENUM ALLOY -U-

AUTHOR-(03)-KALINOVICH, D.F., KOVENSKIY, I.I., SMOLIN, N.D.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 929-31

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NICKEL ALLOY, MOLYBDENUM, SOLID SOLUTION, NICKEL ISOTOPE, RADIOACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1290 STEP NO--UR/0181/70/012/003/0929/0931

CIRC ACCESSION NO--AP0116752

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116752

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN NI-23 AT. PERCENT MO, THE CHARGE ON THE NI IONS WAS DETD. FROM ELECTROTRANSPORT AT 1100-1300DEGREES, I.E., IN THE REGION OF EXISTENCE OF A SOLID SOLN. WIRE SECTIONS 70 MM LONG AND 0.45 MM IN DIAM. WERE USED. ON THE CENTRAL SECTION OF THE SPECIMEN, 3 MM LONG, A THIN LAYER OF PURE NI CONTG. RADIOACTIVE PRIME63 NI WAS ELECTRODEPOSITED. DISTRIBUTION OF RADIOACTIVITY WAS MEASURED ALONG THE LENGTH OF THE SPECIMENS. FROM THESE CURVES, THE PARTIAL VELOCITY OF ELECTROTRANSPORT AND THE DIFFUSION COEFF. AT THE TEMP. OF THE EXPT. WERE DETD. ALSO, THE VELOCITY OF MIGRATION OF THE RADIOACTIVE ZONE DURING ANNEALING WAS DETD. THE VALUES OBTAINED ARE TABULATED. FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DEVELOPMENT AND APPLICATION OF AN ELECTRON TRANSFER TECHNIQUE FOR DETERMINING THE BASIC PARAMETERS OF A METALLIC STATE -U-

AUTHOR-(04)-FRANTSEVICH, I.M., KALINOVICH, D.F., KOVENSKIY, I.I., SMOLIN, M.D.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UKRAINS'KOI RSR, VISNIK, VOL. 34, MAR. 1970, P. 24-33

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--METAL CONDUCTIVITY, CARRIER DENSITY, ELECTRON MOBILITY, BINARY ALLOY, ELECTRON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0932 STEP NO--UR/0655/70/034/000/0024/0033

CIRC ACCESSION NO--AP0118098

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 019

CIRC ACCESSION NO--AP0118098

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF A THEORETICAL BASIS FOR A METHOD OF DETERMINING THE BASIC METALLIC STATE CHARACTERISTICS OF A MEDIUM, SUCH AS METALLIC ION CHARGES, ELECTRON AND HOLE CONCENTRATIONS, CURRENT CARRIER SCATTERING CROSS SECTIONS AND THE TEMPERATURE PARAMETERS OF ELECTRON AND HOLE CONDUCTIVITIES. THE METHOD IS BASED ON CERTAIN RELATIONS BETWEEN THESE VARIABLES. THE EXISTENCE OF THESE RELATIONS IS SUGGESTED BY AN ELECTRON TRANSFER THEORY DEVELOPED BY KUZ'MENKO AND KHAR'KOV (1960) IN A TWO ZONE QUANTUM MODEL APPROXIMATION. EXAMPLES OF THE PRACTICAL IMPLEMENTATION OF THIS METHOD ARE GIVEN FOR SEVERAL BINARY ALLOYS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DEGREE OF IONIZATION OF MOLYBDENUM ATOMS IN A NICKEL MOLYBDENUM SOLID SOLUTION -U-

AUTHOR-(02)-KALINOVICH, D.F., KOVENSKIY, I.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(3), 67-1

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NICKEL ALLOY, MOLYBDENUM ALLOY, SOLID SOLUTION, IONIZATION, METAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0942 STEP NO--UR/0126/70/029/003/0671/0672

CIRC ACCESSION NO--AP0121544

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLID SOLN. OF MO (23 AT.PERCENT MO) IN NI WAS STUDIED AT 100-1300DEGREES, I. E. IN THE SOLID SOLN. REGION. THE EFFECTIVE CHARGE OF THE MO IONS WAS THE FUNDAMENTAL PARAMETER DETD. THE DIFFUSION COEFFS. WERE CALCD. FOR ALL EXPTL. TEMPS. FROM THE DISTRIBUTION CURVES FOR THE ACTIVITIES. THE EXPTL. MEASUREMENTS SHOWED A LINEAR TEMP. DEPENDENCES OF THE ELEC. RESISTIVITY. THE SIGN AND THE EFFECTIVE CHARGE VALUES OBTAINED ATTEST TO THE FACT THAT THE MAGNITUDE AND THE DIRECTION OF THE ELECTROTRANSPORT EFFECT OF MO IN THE GIVEN ALLOY ARE DETD. PRIMARILY BY THE SCATTERING OF HOLES ON ITS IONS, ENTRAINING THEM TOWARD THE SIDE OF THE CATHODE.

FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 669.24

KALINOVICH, D. F., KOVENSKIY, N. I., and SMOLIN, M. D., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Determination of the Degree of Nickel Atom Ionization in a Ni-Cr Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 428-429

Abstract: An evaluation of nickel ion charge was made for an alloy of nickel containing 25 wt% Cr. The method of electron transfer was used to determine the sign and magnitude of the charge. Samples were mixed in an atmosphere of neutral gas and a d.c. current passed through them to develop an electrical field while simultaneously heating them to the required temperature. Data from processes of annealing the alloy samples several times made it possible to plot three curves from which the diffusion coefficients could be calculated. With the aid of the same curves it was possible to determine the rate of migration v and then the partial rates of electron transfer v. Determination of the magnitude of the effective charge z^* was made using the following equation:

$$z^* = z + b(1/T + \rho \, \alpha/\alpha \,)$$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

KALINOVICH, D. F., et al., Fizika Metallov i Metalloveideniye, Vol 33, No 2, Feb 72, pp 428-429

where z is the degree of nickel atom ionization, b is the coefficient in which enters the cross section of the current carrier dissipation to the migrating ions, ρ_0 and α are the parameters of the electrical resistance temperature relationship. The calculated results for z^* showed that nickel atoms in the investigated alloy have a positive charge close to unity in magnitude. One table, 9 bibiliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

UDC 539.4

MOLOCHKOV, M. A., IVANENKO, A. A., VEGROV, A. N., SITNICHENKO, V. P., PULYAYEVSKIY, V. A., KOVESHNIKOV, N. A.

"The Effect of the Stress Concentrator on Fatigue Strength in Male Cone Joints for Titanium Alloy Pipe"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, vyp. 1, pp 78-81 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V1112)

Translation: By testing samples of 7M titanium alloy pipe 12 × 1.5 for fatigue, it was demonstrated that stress concentration in the investigated joint is higher than the theoretically calculated concentration. When testing with a frequency of 200 hertz on a 10^7 cycle base, the effective concentration factor was 3.2 with a fillet radius of 0.5 mm. The reduction in fatigue strength is ascribed to significant residual strains reaching 15% in the diameter transition zone.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ANOMALOUS TRANSMISSION OF X RAYS FOR DIVERGENT INCIDENT BEAM -U-

AUTHOR-(03)-KOVEV, E.K., KOROVIN, L.I., EFIMOV, O.N.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 38, NR 2, PP 531-540

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY SCATTERING, ELECTROMAGNETIC WAVE REFLECTION, ELECTROMAGNETIC WAVE PROPAGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0943 STEP NO--GE/0030/70/032/002/0531/0540

CIRC ACCESSION NO--AP0107472

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 029 UNCLASSIFIED PROCESSING [redacted]--30OCT70

CIRC ACCESSION NO--AP0107472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE ANALYTICAL FORM OF SOME CHARACTERISTICS OF THE ANOMALOUS TRANSMISSION OF X RAYS FOR DIVERGENT INCIDENT BEAM IS DIFFERENT FROM THE CORRESPONDING EXPRESSION DERIVED FOR THE CASE OF PARALLEL BEAM. IN PARTICULAR, THE EXPRESSIONS FOR THE REFLECTION COEFFICIENT AND HALF WIDTH ARE MODIFIED, WHILE THE INTEGRATED INTENSITY PRESERVES THE SAME MEANING. THE NEW CONTENT OF THE REFLECTION COEFFICIENT MAKES IT POSSIBLE TO USE IT FOR OBTAINING THE INTEGRAL CHARACTERISTICS OF ANOMALOUS TRANSMISSION, CONNECTED WITH DIFFERENT PARTS OF THE STRUCTURE FACTOR. CONSIDERATION OF THE DIVERGENCE OF THE INCIDENT BEAM LEADS TO A GOOD AGREEMENT OF THE EXPERIMENTAL AND THEORETICAL DATA FOR THE CHARACTERISTICS OF ANOMALOUS TRANSMISSION. FACILITY: INSTITUTE OF SEMICONDUCTORS, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

AA0039788 Kovgan, P. A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70.

236766 SMELTING OF ORES, CONCENTRATES AND WASTE PRODUCTS from production of non-ferrous metals in shaft furnaces, is modified by feeding hot metal gases previously mixed with cold or hot air or oxygen-enriched air through nozzles or burners situated above the level of the tuyeres. This enables the costs of the process to be reduced and production capacity of the furnace to be increased. 1.2.64. as 881159/22-2. Yu.A. AGAPOV et al. Chimkent Sec. M.I. Kalinin Lead Works, Non-Ferrous Metals Res. Inst. and Metallurgy & Ore Enrichment Inst. Acad. Sciences Kazakh SSR. (10.6.69.) Bul.7/3.2.69. Class 40a. Int.Cl.C22b.

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AA0039788

AUTHORS: Agapov, Yu. A.; Gayvoronskiy, A. G.; Yevdokimenko, A. I.; Yelyakov, I. I.; Kovgan, P. A.; Malkin, Ya. Z.; Polyvyanyy, I. R.; Ponamarev, V. D.

Chimkentskiy Ordena Lenina Svintsovyy Zavod imeni M. I. Kalinina, Gosudarstvennyy Nauchno-Issledovatel'skiy Institut Tsvetnykh Metallov i Institut Metallurgii i Obogashcheniya AN Kazakhskoy SSR

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19741101

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THERMOPHYSICAL AND THERMOMECHANICAL PROPERTIES OF A LEAD SINTER -U-

AUTHOR-(02)-KOVGAN, P.A., YEVDOKIMENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 13-16

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--POWDER METAL SINTERING, LEAD, THERMAL CONTRACTION, THERMAL CONDUCTIVITY, TEMPERATURE DEPENDENCE, THERMAL STABILITY, PARTICLE SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1924 STEP NO--UR/0136/70/043/002/0013/0016

CIRC ACCESSION NO--AP0108253

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEAT CONSUMPTION, SP. HEAT, TEMP. COND., HEAT COND., AND SHRINKAGE OF PB SINTER INCREASED WITH TEMP. INCREASE AT SMALLER THAN OR EQUAL TO 900DEGREES. LUMP SINTER SHOWED A GREATER INCREASE THAN SINTER POWD. TO 1-3 MM. THE LUMPS HAD GREATER HEAT STABILITY IN MECH. STRENGTH.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 032 UNCLASSIFIED PROCESSING DATE--[illegible]

TITLE--EFFECT OF SHEAR STRESS ON THE DIELECTRIC PROPERTIES OF HYDRATED CALCIUM GREASES -U-

AUTHOR-(02)-KOVGANICH, N.YA., DEYMEGA, YU.F.

COUNTRY OF INFO--USSR

SOURCE--DOPOV. AKAD. NAUK UKR. RSE. SER. B 1970, 32(1), 64-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GREASE, ORGANOCALCIUM COMPOUND, LUBRICANT, DIELECTRIC PROPERTY, PETROLEUM PRODUCT, SHEAR STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0069 STEP NO--UR/0442/70/032/001/0064/0067

CIRC ACCESSION NO--AT0110049

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0110049

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF SHEAR STRESS ON DIELEC. CONST. EPSILON OF LUBRICANTS CONTG. CA SOAP HYDRATES WAS MEASURED. LAURIC, MYRISTIC, PALMITIC, STEARIC, AND BEHENIC ACIDS, VIGOROUSLY STIRRED IN PETROLEUM OIL (165 CST AT 20DEGREES), WERE SAPOND. WITH CA(OH)SUB2 AT 70-106DEGREES TO YIELD GREASES CONTG. 25PERCENT NEUTRAL SOAP AND 1.1PERCENT WATER OF HYDRATION. THE EPSILON OF LUBRICANTS WHICH CONTAINED ONLY ONE KIND OF SOAP WERE PROPORTIONAL TO THE LENGTHS OF SOAP ALKYLS AND WERE NOT AFFECTED BY SHEAR RATE. IN LUBRICANTS CONTG. A MIXT. OF 3 AND 5 DIFFERENT SOAPS, THE EPSILON OF THE STATIC SYSTEM WERE HIGHER THAN FOR ANY SINGLE SOAP DISPERSION. WITH INCREASED SHEAR RATE, EPSILON DECLINED RAPIDLY. WHEN THE SHEAR RATE WAS DECREASING THE EPSILON WERE RISING BUT BY SMALLER INCREMENTS AND TO A SMALLER FINAL VALUE. ACCORDING TO ELECTRON MICROSCOPY THE MIXED SOAP CRYSTALS HAD STRUCTURE DEFECTS IN WHICH WATER MOLS. WERE LOCATED. IT WAS ASSUMED THAT, AS IN CA SOAPS OF HYDROXY ACIDS (E.G., RICINOLEIC) THERE WAS H BONDING BETWEEN ALKYL GROUPS AND WATER. UNDER SHEAR STRESS THE H BONDS WERE BROKEN, THUS EFFECTING TRANSFER OF PROTONS. AS IN RICINOLEATES, THIS CONTRIBUTED TO THE INCREASED POLARIZATION OF LUBRICANTS WHICH CONTAIN HYDRATED SOAPS OF DIFFERENT ALKYL LENGTHS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 621.735.043.016.3:669.14.018.252.3

CHERNYY, YU. F., ALISTRATOV, L. I., BEREZIN, A. A., GALKIN, A. A., KOVIKO, V. S., KULIKOV, N. I., SPUSKANYUK, V. Z., and SHTOKMAN, A. D.

"Industrial Introduction of Technique of Hydropressing of Tool Billets From Steels R18, R12, R9"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 71, pp 11-12

Abstract: Experimental investigations at Dnepropetrovsk Physicotechnical Scientific Research Institute, Academy of Sciences Ukrainian SSR, showed that the cold plastic deformation of billets of high-speed steels R18, R12, and R9 by the hydropressing method results in significant refinement and more uniform distribution of the carbide phase. Investigations of R18 steel billets following hydropressing, annealing, and heat finishing showed an increase in the mechanical properties and thermostability of the steel, while production tests of 10-mm-diameter reamers showed a 60-70 percent increase in tool durability. Hydropressing of cylindrical round-section billets from R18, R12, and R9 bars up to 30 mm in diameter has been introduced at one of the

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USSR

CHERNYY, YU. F., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 71, pp 11-12

Donetskaya Oblast plants. A model P479 hydraulic press is used for billet deformation. The hydropressing setup consists of a high-pressure multilayer container, rod and die with gasketing, an upper and lower plate, and a centerer and fastener. The tool billet hydropressing process provides for the preparation of initial billets, straining of the billets, and their subsequent treatment. Kh12M steel (HRC 57-59) is used for the die. The economic advisability of using the technique of high-speed steel hydropressing for the fabrication of tool billets is based mainly on the increased tool durability as a result of the improved structure and physicomechanical properties of the steel after deformation. There is a saving in high-speed steels because the billet comes as close as possible to the tool size.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

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KOVLOVA

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

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TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

27 Oct 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1966

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

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- Title Page -

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UDC: 539.1.075

USSR

KOVNATSKIY, Ye. F., ROSLYY, Ye. I., SILANT'YEV, A. N.

"A Simple Two-Dimensional Analyzer of Beta-Gamma Coincidences for Analyzing Samples of Radioactive Fallout"

Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. min. SSSR (Works. Institute of Experimental Meteorology. Main Administration of the Hydrometeorological Service Affiliated With the Council of Ministers of the USSR), 1972, vyp. 25, pp 117-120 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.1322)

Translation: The paper describes a two-dimensional β-γ coincidence analyzer based on two industrial AI-100 analyzers. A distinguishing feature of the unit is the possibility of registering the coincidence spectra on punched tape during measurement. The beta and gamma spectra taken in the single--crystal spectrometer mode are registered on the tape at the end of the experiment. A block diagram of the unit is given along with a schematic of the control module. Two illustrations, bibliography of four titles. Resumé.

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JPRS 60659
27 November 1973

ANALYSIS OF THE CHARACTERISTICS OF CONDUCTION MAGNETOHYDRODYNAMIC PUMPS WITH SIMILARITY CRITERIA

[Abstract of a Paper by D. S. Kovner and Yu. P. Gakalov Given at the Magneto-hydrodynamic Conference, P 186]

The system of similarity criteria obtained describes the operation of the conduction magnetohydrodynamic pump, the operation of the pump channel in a magnetic field of the excitation system and also the operation of the excitation system. Studies were made of the required simulation conditions in the general case and in the case of self-similar modes of flow by the ordinary Reynolds number, the magnetic Reynolds number and the relative magnetic permeability of the magnetic circuits.

Equations were obtained which describe the head and volt-flow characteristics of the channel in the similarity criteria considering the hydraulic losses and considering nonlinearity of the magnetization curve. From the formula for the efficiency, the condition was obtained which is necessary for the existance of a maximum efficiency of the pump of given configuration in the nonlinear section of the magnetization curve.

$$\varphi(j)+\frac{1}{j}\dot{\varphi}(j)=0,$$

where j is the dimensionless excitation current, and φ is the relative induction in the gap.

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CSO: 8044/0653-W

KOVNER, D. S.

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UNCLASSIFIED PROCESSING DATE--20NOV70

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TITLE--TURBULENT FLOW OF A CONDUCTING FLUID IN A LONGITUDINAL MAGNETIC FIELD -U-

AUTHOR-(02)-KOVNER, D.S., LUSHCHIK, V.G.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA, JAN.-FEB. 1970, P. 10-17.

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LONGITUDINAL MAGNETIC FIELD, TURBULENT FLOW, PLASMA CONDUCTIVITY, STRESS ANALYSIS, TENSOR ANALYSIS, PRANDTL NUMBER, TURBULENT BOUNDARY LAYER

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CIRC ACCESSION NO--AP0112451

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2/2 062 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A SEMIEMPIRICAL TURBULENCE THEORY ON THE BASIS OF THE REYNOLDS STRESS TENSOR EQUATIONS (TURBULENT ENERGY BALANCE EQUATIONS) FOR THE CASE OF THE FLOW OF A CONDUCTING FLUID IN A LONGITUDINAL MAGNETIC FIELD. THE INFLUENCE OF THE FIELD IS TAKEN INTO ACCOUNT BY A TERM DESCRIBING THE JOULE DISSIPATION OF TURBULENT ENERGY. A HYPOTHESIS CONCERNING THIS TERM IS FORMULATED WHICH HAS A CLEAR PHYSICAL MEANING AND WHICH TAKES CHANGES IN THE TURBULENT STRUCTURE OF THE FLOW IN A MAGNETIC FIELD INTO ACCOUNT. IT IS SHOWN THAT BY USING THIS HYPOTHESIS, TOGETHER WITH ROTTA'S (1951) RELATIONS FOR THE OTHER TERMS IN THE EQUATIONS FOR THE REYNOLDS STRESS TENSOR, IT IS POSSIBLE TO OBTAIN AN EXPRESSION FOR THE TURBULENT FLOW. THIS EXPRESSION IS ANALOGOUS TO THE WELL KNOWN PRANDTL'S RELATION, EXCEPT FOR THE FORM OF THE COEFFICIENT DESCRIBING THE INFLUENCE OF THE MAGNETIC FIELD.

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USSR

UDC: 532.517.4:532.542.4

ABRAMOVICH, G. N., KOVNER, K. S., LUSHCHIK, V. G., Moscow Aviation Institute imeni Sergo Ordzhonikidze

"Concerning the Action of a Magnetic Field on Turbulence in a Shear Flow"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 4, 1 Feb 72, pp 783-786

Abstract: Experimental research shows that when a magnetic field is imposed upon the turbulent flow of an electrically conductive liquid, the level of turbulence, the friction stress, and the intensity of heat exchange usually decrease. The influence of the magnetic field on these turbulence characteristics can be qualitatively explained and quantitatively evaluated on the basis Prandtl's mixing-path theory. In a turbulent flow in the absence of a magnetic field, it is usually assumed that from the moment of origin of a discrete turbulent mole until fusion with a new layer of liquid it moves by inertia, retaining a constant value of velocity, and at the moment of loss of its individuality it creates a velocity pulsation equal to the difference of the averaged velocities at the length of the mixing path. It can be seen that the forces acting upon the mole in a magnetic field are always directed against the motion, in other words they bring about a decrease of the pulsation velocities, the pulsation-force component in the direction of the magnetic field being equal

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USSR

ABRAMOVICH, G. N., et al., Doklady Akademii Nauk SSSR, Vol 202, No 4, 1 Feb 72, pp 783-786

to 0. Expressions for turbulent friction in two-dimensional flow can be obtained for various orientations of the external magnetic field. On the basis of the obtained expressions for turbulent friction, consideration is given to the flow of an electrically conductive liquid in a free boundary layer in the simplest case, when the influence of the magnetic field with average motion is absent (the case of a longitudinal field and a circumferential field). From formulas obtained with the presence of a magnetic field, it becomes evident that an increase in the value of the criterion of magneto hydrodynamic interaction (of the magnetic field) brings about a narrowing of the mixing-zone width in comparison to the case of the absence of a magnetic field. 6 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

UDC 539.194

BABKOV, L. M. KOVNER, M. A., MEL'NIK, V. I., PUCHKOVSKAYa, G. A., KhARCHENKO, N. P., and ShPAK, N. T.

"Vibration, Luminescence, and Absorption Spectra of Benzophenone and Their Interpretation"

Leningrad, Optika i Spektroskopiya, Vol 35, No 1, Jul 73, pp 58 - 64

Abstract: Benzophenone has a number of properties that are presently of interest: significant piezoelectric effect, 100% conversion from the excited singlet level to the triplet state, high photochemical activity in hydrogen-containing solvents, and effective transfer of excitation energy. The majority of these effects are due to the characteristics of the electron structure of the benzophenone molecule.

In this study, infra-red spectra and luminescence and absorption spectra of benzophenone are obtained and their oscillatory structure is resolved. The problem of normal molecular oscillations of benzophenone in the ground electron state is solved. On the basis of a calculation of the frequencies and shapes of oscillations the frequencies are related to types of symmetry of the C_2 group and to oscillations of bonds and angles. The changes in the oscillatory frequencies with excitation to the singlet and triplet electron states are determined and an interpretation of the vibron transitions is suggested.

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UDC 621.375.82

USSR

IYEVLEVA, L. D., KARAGODOVA, T. Ya., KOVNER, M. A.

"Induced Raman Emission by Magnetic Sublevels of Atoms"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 246-249 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D874)

Translation: A study was made of induced Raman emission by the magnetic sublevels of atoms placed in a constant magnetic field H under conditions in whihc the high-frequency Stark shifts are less than the Zeeman splittings. The susceptibility for induced Raman emission on the Zeeman sublevels was calculated. The possibility of the appearance of new intercombination transitions in the atoms in the case of the Raman effect in a magnetic field and the possibility of smooth frequency tuning of the scattered light by the magnetic field are discussed.

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UDC 538.56

USSR

KOVNER, M. S., PAVEL'YEV, D. G., SHKELEV, YE. I.

"Temperature Dependence of the Gunn Generation Parameters"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1918-1922

Abstract: A study was made and results are presented for the temperature dependence of the frequency and power of a pulse generator in the Gunn generation mode. The diodes were made of monocrystalline gallium arsenide (GaAs) with a donor concentration $n_d \gtrsim 10^{15}$ cm^{-3}. Under the experimental conditions, the high-frequency field of the resonator could not have a significant effect on the time and rate of onset of the strong field domain and, consequently, the generation frequency. Thus, the generation parameters were measured under conditions of maximum output power insuring tuning of the coaxial resonator in which the GaAs sample was placed. Graphs are presented of the dependence of the average generation power on the tuning of the resonator for 3 diodes. The mechanism of the effect is described. An increase in the average generator power with an increase in T_0 in the investigated temperature range was observed experimentally, and curves are presented for this. With variation of T_0, the

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USSR

KOVNER, M. S., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1919-1922

resonator was tuned to maximum power when the generation frequency is determined by the transit time of the diode. The increase in power is connected with an increase in the carrier concentration. If the tuning of the resonator is fixed, then with an increase in temperature as the drift frequency moves away from the natural frequency of the resonator, a decrease in power or even disruption of generation can occur.

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USSR UDC: 538.56:533.9.02

KOVNER, M. S., LAPIDUS, V. A., and LUPANOV, G. A.

"Radiation of Electric and Magnetic Dipoles in the Hollow Formed by a Plasma Layer"

Gor'kiy, Izvestiya VUZ--Radiofizika, Vol. 14, No. 1, 1971, pp 28-35

Abstract: The radiation of an electric and a magnetic dipole at the center of a dielectric sphere of given radius and a given dielectric constant surrounded by a spherical plasma layer having a dielectric constant of some other value is considered. The purpose of this analysis is to determine the characteristics of the dipoles, examining first the electric dipole and then the magnetic dipole. For the first of these, the authors begin with the wave equations for the vector potential A, obtaining equations for the electric and magnetic fields in terms of it. Because the expressions obtained for the antenna radiation resistance in three different regions of the space surrounding the antenna are too awkward, the authors resort to quasi-static and wave approximations. The magnetic dipole is similarly treated, beginning with E and H

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KOVNER, M. S., Izvestiya VUZ--Radiofizika, Vol 14, No 1, 1971, pp 28-35

equations in terms of a magnetic potential. The radiation spectrum is plotted, and it is found that the field cannot penetrate the plasma layer at frequencies approaching zero. The authors express their gratitude to A. A. Andronov and Yu. V. Chugunov for their comments.

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Acc. Nr: AP0043583 KOVNER S.N. Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 2, pp 494-506

LOW FREQUENCY ANTIFERROMAGNETIC RESONANCE IN COPPER CHLORIDE DIHYDRATE AND PHASE TRANSITIONS

V. G. Baryakhtar, A. A. Galkin, S. N. Kovner, V. A. Popov

Antiferromagnetic resonance in a $CuCl_2 \cdot 2H_2O$ single crystal is investigated at frequencies of 5.2, 3.0, 1.1 and 0.65 Gc/s. The dependence of resonance fields corresponding to frequencies 3 and 0.65 Gc/s on temperature is measured at temperatures between 1.52 and 4.2° K. The resonance field corresponding to the frequency 0.65 Gc/s and the larger of the resonance fields corresponding to the frequency 3 Gc/s within the experimental errors vary with temperature just as the overturning field of the sublattice magnetic moments does. The magnetic moment homogeneous oscillation frequencies in an antiferromagnet separated into domains are calculated. A phase equilibrium diagram is proposed for $CuCl_2 \cdot 2H_2O$ in a magnetic field parallel to the «easy» axis. The temperature dependence of the lability fields is calculated in the spin wave theory approximation.

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UDC: 62-50

USSR

KHITRIK, V. E., KOVNER, V. Ya.

"Selecting the Law of Motion of Mechanical Systems With One Degree of Freedom From Conditions of Optimization With Respect to Combined Dynamic Criteria"

Teoriya mekhanizmov i mashin. Resp. mezhved. temat. nauch.-tekhn. sb. (Theory of Mechanisms and Machines. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 13, pp 61-70 (from RZh--Mekhanike, No 9, Sep 72, Abstract No 9A128)

Translation: The dynamic operating mode of mechanisms with a single degree of freedom is optimized to improve the productivity of automatic machines, and a combined dimensionless criterion [is given] which accounts simultaneously for the rms value of the invariant of the dynamic power or the mean integral acceleration with a weight given in the form of a continuous or piecewise-constant weight function. The problems are solved in analytical form. Bibliography of 7 titles. Authors' abstract.

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USSR

KOVNERISTYY, YU. K.

"Fourth International Symposium on 'Metallic Materials and Their Heat Treatment'"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 75-77

Abstract: The Fourth International Symposium on Metallic Materials and Their Heat Treatment was held 11-15 September, 1973 in Czechoslovakia. Some 320 delegates representing 15 countries including, in addition to the CEMA countries, Austria, England, France, West Germany, Sweden, Switzerland, Holland and Japan, took part in the conference. 54 reports were held, covering the following pressing problems and interesting areas of metals science and the heat treatment of steels and alloys: phase conversions in iron-based alloys, diffusion processes, the relationship between the structure and properties of steels, progressive technological processes and devices for heat treatment of metals.

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UDC 669.15'74'24-194.3

USSR

BANNYKH, O. A., KOVNERISTYY, Yu. K., and PEDAN, T. N., Moscow

"Phase Transformations and Mechanical Properties of High-Alloy Cr-Mn-Ni Steels"

Moscow, Akademiya Nauk SSSR. Izvestiya. Metally, No 6, Nov-Dec 72, pp 123-129

Abstract: The basic phase transformations taking place under the effect of temperature and plastic flow in high-alloy Cr-Mn-Ni steels are considered and which also determine three important qualities inherent in these steels: the possibility of considerable work hardening while retaining the nonmagnetic state, high temperature-time stability of the austenitic structure, and superplasticity. Manifestation of these qualities depends on the development of various phase transformations and, consequently, is determined by the chemical composition of the steel.

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UDC: 539.4.019.3

USSR

KOVERISTYY, YU. K.

"Absorption of Superhigh-Frequency Radiation in Heterogeneous Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 139-140

Abstract: The interaction of superhigh-frequency radiation with heterogeneous alloys has been studied. The effect of the microstructure and composition on the absorption properties of materials is discussed. It was found that the volume absorption of superhigh-frequency radiation is determined by the uniform distribution of finely dispersed particles of materials segregated from each other by oxides-dielectrics. Conditions for the optimization of the absorption properties in heterogeneous alloys are revealed. The materials involved in this study were four series of alloys with a variable content of 1) iron and Al_2O_3 oxides; 2) nickel and Al_2O_3 oxides; 3) chromium and Al_2O_3 oxides; 4) niobium and Al_2O_3 oxides. The greater effect of absorption for iron as compared with the other metals is explained by the fact that for ferromagnetic metals the "electric

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USSR

KOVNERISTYY, Yu. K., Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 139-140

losses" are complemented by "magnetic losses." The prerequisite for volume absorption of superhigh-frequency radiation is the discontinuous of distribution of the finely disperse metallic phase over the entire volume of the alloy.

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UDC 620.172.251.226

USSR

KOVPAK, V. I., and OLISOV, A. N., Institute of Problems of Strength, Academy of Sciences Ukrainian SSR

"Some Features of High-Temperature Creep in Nickel-Base Alloys"

Kiev, Problemy Prochnosti, No 3, Feb 73, pp 48-52

Abstract: The principles of the creep process were investigated for two nickel-base alloys (EI617 and EI826). The experimental data were treated by the different known equations for determining their possible application to the prognosis of the creep characteristics according to the results of tests of restricted duration. Alloy EI617 was tested in the 750-900°C interval at stresses of 7-40 kG/mm², and alloy EI826 -- in the 750-880°C interval at stresses of 10-50 kG/mm². The method is described of making the prognosis of creep characteristics which is based on the assumption of a condition of "equivalency of material damage," and is true for determining the temperature-time intervals. An additional basis for the assumption about equivalency of the rates of steady-state creep in specified temperature-time intervals was evident in the fact that, at higher temperatures, structural changes in alloys (particularly precipitation and coalescence of secondary phases) occur at a rapid rate, although the sequence of these changes is preserved. This assumption was verified by the nature of change in the shapr of creep curves. Five figures, 12 bibliographic references.

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UDC: 620.172.226

USSR

Kovpak, V. I., Marusiy, O. I., Kiev

"Equivalent Damage Rates During Long-term Strength Testing"

Kiev, Problemy Prochnosty, No 4, Apr 72, pp 38-45.

Abstract: It is suggested that the characteristics of heat resistance at various temperature levels in inclined cross-sections consisting of straight rays leaving a common point (pole) be compared. The points of intersection of the rays with the long-term strength diagrams for various temperatures determine the values of stresses and times to rupture, between which there is a certain correlation, based on the conditions of equivalence of damage rates. Methods are shown for determination of the conditions of equivalent damage rates by experiment and by analysis of primary long-term strength diagrams. Metallographic investigation of specimens ruptured at two temperature levels under conditions of equivalent damage rate are performed.

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USSR

KOVPAK, V. I.

"An Analysis of Some Phenomenological Relationships of Long-Term Strength"

Kiev, Problemy Prochnosti, No 6, June 1970, pp 17-24

Abstract: An analysis is made of the power relationship and the exponential relationship of long-term strength to time in terms of a new equation, proposed by the author, and the adopted method of approximation in the coordinates of stress and a parameter k. It is shown that when this equation is used for approximating long-term strength, the power and exponential relationship may be used for determining supplementary intermediate stresses between experimentally obtained data within a considerable interval, assuming a linear relationship between the heat-resistance parameter and the stress.

The steels considered in the study are 20KhML, EI 826, EI607 and 1Kh18N12T.

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USSR

KOVPIK, O. F., KORNILOV, YE. A., KOLYADA, YU. YE., SHAPIRO, V. D., and SHEVCHENKO, V. I.

"Electron-Beam Excitation of Low-Frequency Oscillations in a Hot Plasma Confined by a Mirror Machine"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 10, Oct 72, pp 2056-2061

Abstract: The article describes results of a study of the interaction of an electron beam with a hot plasma in a mirror machine and the heating of the plasma by ion-sound oscillations excited by the beam. The results indicate the following:

1. An electron beam effectively interacts with a hot plasma, exciting ion-sound instability.

2. Scattering of the beam electrons by the ion-sound oscillations and their capture by the mirror machine can result in the creation of large electrostatic potentials, the presence of which causes the appearance of centrifugal instabilities.

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USSR

KOVPIK, O. F., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 10, Oct 72, pp 2056-2061

3. Effective ion heating is possible in the interaction of an electron beam with a hot plasma.

The authors thank YA. B. FAYNBERG for the suggested subject and for discussing the work, S. M. KRIVORUCHKO for helping in the measurements, and L. I. BOLOTIN for his interest in the work.

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USSR

UDC 533.92:621.039.61

KOVPIK, O. F., KOLYADA, Yu. Ye., KORNILOV, Ye. A., LIFSHITS, Ye. V., NEKRASHEVICH, S. A.

"The Effect of External High-Frequency Modulation of an Electron Beam on Ion Heating Upon Interaction of the Beam With a Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 15-23 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G284)

Translation: The effect of external high-frequency beam modulation on the heating of ions and electrons in a magnetic trap under conditions of beam instability is investigated experimentally. Under beam modulation at a frequency less than the electron-plasma frequency there is observed an increase in the low-frequency fields with a simultaneous increase in both the temperature and the number of accelerated ions. It is hypothesized that acceleration of ions in fields of low-frequency oscillations, the excitation of which is caused by nonlinear interaction of high-frequency

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KOVPIK, O. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb., 1972, No. 3, pp 15-23

oscillations, is of a stochastic nature. The experiment was conducted on an electron beam with an energy up to 20 kev and a current up to 20 a in a magnetic field of mirror configuration 3-1-3 kgauss.

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R.A. KOVRAZHKIN

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Acc. Nr.: AP0042570

Ref. Code: UR0223

FTRS 5016 2

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Galperin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Temnyy, N. [illegible] Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-130)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 20 December 1968. Orbital inclination to the equator was 72°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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Reel/Frame

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burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foregion so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low -Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

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R.A. KOVRAZHKIN

9

Acc. Nr.: AP0042567

Ref. Code: UR0293

JPRS 56132

Measurements of Intermediate- and High-Energy Particles

(Abstract: "Measurements of Charged Particles of Intermediate and High Energies," by A. D. Bolyunova, A. D. Verevkin, Yu. I. Gal'perin, [illegible] Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isayeva, I. P. Karpinskiy, R. A. Kovrazhkin, V. V. Temnyy, B. I. Khasanov, A. V. Shifrin and F. K. [illegible]; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 126-135)

[Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

This article describes the RIE-205 scintillation spectrometer for electrons of intermediate energies, the RIP-802 scintillation spectrometer for protons and the RIG-111 lead-shielded Geiger counter. The RIE-205 instrument measured electrons in the ranges 20-45, 45-85, 85-120 and 120-150 keV and the total intensity of electrons with an energy greater than 150 keV (geometry factor $2 \cdot 10^{-3} cm^2 \cdot sterad$). The RIP-802 instrument measured protons in the ranges 0.30-0.45, 0.45-0.70, 0.70-0.95 and 0.95-9 MeV with a geometry factor of $1.5 \cdot 10^{-2} \cdot sterad$. The RIG-111 instrument measured

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

AP0042567

protons with $E > 50$ MeV and hard electrons. In the radiation belts and auroral zones the instruments measured the fluxes and energy spectra of electrons and protons, their distribution by pitch angles and spatial-temporal characteristics. It was possible to determine the latitude variation of the intensity of injected electrons, the pitch distribution of intensity for auroral zone electrons and the differential electron spectra. For example, the electron fluxes measured with the RIE-205 spectrometer can be assigned to the following groups: a) trapped electrons in the inner zone ($L \leq 2.5$) were registered for the most part in the region near the Brazilian anomaly; their flux for an energy $E > 150$ keV attained 10^8 particles/cm^2·sec. and was highly dependent on pitch angle; a pronounced maximum was observed for pitch angles 90°; b) trapped electrons in the outer zone $2.5 \leq L \leq 7$, also with a maximum intensity for pitch angles of 90°; in many cases quasitrapped particles were registered in the region of invariant coordinates $h_{min} \leq 100$ km with intensities up to $2 \cdot 10^5$ particles/cm^2·sec·sterad; c) sporadic hard electrons injected into the atmosphere in the middle latitudes; in these cases the mean energy was usually ~ 100 keV and the particle flux attained 10^3 particles/cm^2·sec; d) electrons of intermediate and high energies injected into the atmosphere in the high latitudes; they are frequently observed near the auroral zone.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

Acc. Nr. AP0048368 Abstracting Service: INTERNAT. AEROSPACE ABS. Ref. Code: UR0293

A70-24315 # Study of the geoactive particles and photoelectrons by means of satellite 'Kosmos-261.' IV—Study of charged particles with a middle and high energy (Issledovanie geoaktivnykh korpuskul i fotoelektronov na sputnika 'Kosmos-261.' IV—Izmereniia zariazhennykh chastits srednikh i vysokikh energii). A. D. Bolunova, A. D. Verevkin, Iu. I. Gal'perin, L. S. Gorn, L. S. Thunel, I. D. Ivanov, R. N. Ismeya, I. P. Karpinskii, R. A. Kovrazhkin, V. V. Temnyi, B. I. Khazanov, A. V. Shifrin, and F. K. Shuiskii. *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 128-135. 7 refs. In Russian.

Descriptions of the scintillation spectrometers for measuring the electrons with energy ranging from 20 to 150 keV and more, protons with energy ranging from 0.30 to 9 MeV. A wall-screened Geiger counter for measuring the protons with energy above 50 MeV and rigid electrons is also described. The latitude-dependent intensity distribution of the intrusive electrons is determined together with the pitch distribution of the electron intensity in the auroral zone, and differential electron spectra. Z.W.

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19800076

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 032 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--STABILIZATION OF THE DIMENSIONS OF THE ORIENTED ZONE DURING POLYMER DRAWING -U-

AUTHOR-(03)-KOVRIGA, V.V., LEBEDINSKAYA, N.L., CHALIDZE, V.N.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 34-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC INJECTION MOLDING, CAPRONE, TENSILE STRENGTH, MATERIAL TESTING EQUIPMENT, MATERIAL DEFORMATION, MATERIAL DEGRADATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1822 STEP NO--UR/0191/70/000/002/0034/0035

CIRC ACCESSION NO--AP0112306

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 032 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112806

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KAPRON (I) SAMPLES (OBTAINED BY INJECTION MOLDING) WERE DRAWN ON A ZWICK TENSILE TESTING MACHINE AT 5-500 MM PER MIN (AT 23-40DEGREES) UNTIL A REINFORCED REGION WAS FORMED. THE TESTS WERE DESIGNED TO DET. THE RELATION BETWEEN THE GEOMETRICAL PARAMETERS OF THE TRANSITIONAL REGION AND THE DRAWING CONDITIONS OF I. THE DEFORMATION IN THE TRANSITIONAL REGION BECAME CONST. AT A DRAWING RATE OF GREATER THAN OR EQUAL TO 40 MM PER SEC. AT HIGH DRAWING RATES, THE DEGREE OF DRAWING BECAME ESSENTIALLY CONST., BUT I FIBERS UNDERWENT A MARKEDLY MORE RAPID DEGRADATION.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PHYSICOMECHANICAL PROPERTIES OF POLYFORMALDEHYDE DEPENDENT ON THE DIMENSIONS OF SPHERULITES AND CRYSTALLITES IN BULK -U-

AUTHOR-(03)-GUMEN, R.G., KAZARYAN, L.G., KOVRIGA, V.V.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (6), 40-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYFORMALDEHYDE, SPHERULITE, PLASTIC FABRICATION, POLYMER STRUCTURE, PLASTIC MECHANICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0731 STEP NO--UR/0191/70/000/006/0040/0044

CIRC ACCESSION NO--AP0136170

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136170

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION WAS DETG. OF SPHERULITE SIZES ON THE SURFACE AND IN THE INTERIOR OF POLYFORMALDEHYDE (I) SLABS OBTAINED BY MOLDING UNDER VARIOUS CONDITIONS. RAPID COOLING OF THE MOLD DECREASED THE SPHERULITE SIZE ON THE I SURFACE ONLY. OPTIMUM MECH. PROPERTIES WERE OBTAINED WHEN THE SPHERULITES HAD THE SAME DIMENSIONS ON THE SURFACE AS IN THE INTERIOR AND WERE SIMILAR TO 25 MU IN DIAM. THIS WAS ACCOMPLISHED BY LOWERING THE I MELT TEMP. BEFORE POURING INTO THE MOLD, RAPID POURING, HIGH MOLDING PRESSURE, AND LOW MOLDING TEMPS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

Corrosion

USSR

UDC: 621.785.79:669.14.018.8

KONOVALOVA, K. M., KOVRIGIN, A. A., POSTNIKOVA, T. I., Engineers, Kuznetsk Metallurgical Combine

"Effect of $\alpha \rightleftharpoons \gamma$-Conversion on the Corrosion Resistance of OKh17N7Yu1 Steel"

Moscow, Stal', No 7, Jul 72, pp 649-650

Abstract: It is shown that intergranular corrosion in OKh17N7Yu1 high--strength stainless steel is connected with structural changes which take place during heat treatment. One-time high-temperature intermediate tempering at 740-780°C produced 55.8% α-phase, increasing the tendency of the steel toward intergranular corrosion. A second tempering at the same temperature increased the amount of α-phase to 82.6% with more uniform distribution of the α-phase (martensite) within the grain and on the grain boundary. After such heat treatment, the corrosion properties of the steel conform to GOST State Standards 6032-58.

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USSR

AKHMANOV, S. A., ZHDANOV, B. V., KOVRIGIN, A. I., and PERSHIN, S. M., Moscow State University imeni M. V. Lomonosov

"Effective Stimulated Scattering in the Ultraviolet Region of the Spectrum and Variance in Gain in the 0.26-1.06-Micron Range"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 5, 5 Mar 72, pp 266-269

Abstract: Effective induced Raman emission and Mandelstam-Brillouin scattering were obtained in the UV region, and some characteristics of the two types of scattering were studied. An increase in Raman susceptibility in the UV region made it possible to create an effective Raman liquid-nitrogen laser with pumping at $\lambda = 0.26$ micron (at a pumping power of 10 kw in a system without mirrors it was possible to excite Stokes generation with an efficiency reaching dozens of percentage points). A marked increase in gain in the UV region was also recorded for stimulated Mandelstam-Brillouin scattering. The exciting radiation was obtained from a stable neodymium-laser, fourth-harmonic generator with one longitudinal and one transverse mode. The use of a cascaded system permitted simultaneous unimode radiation at $\lambda_1 = 1.06$ microns, $\lambda_2 = 0.53$ micron, $\lambda_3 = 0.35$ micron, and $\lambda_4 = 0.26$ micron. The gain factor for

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USSR

AKHMANOV, S. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 5, 5 Mar 72, pp 266-269

stimulated Raman scattering in the UV region was measured in a parallel beam, and a difference was found in the character of the gain curves. Threshold pumping power values were measured for the Raman laser, as well as threshold pumping energies for stimulated Mandelstam-Brillouin backscattering in crystal and fused quartz. The frequency dependence of threshold characteristics and the character of the light breakdown in crystal and fuzed quartz and ADP were studied.

The authors thank A. Z. Grasyuk for providing the crystal, and L. Pavlov and V. I. Kuznetsov for their assistance in the experiments.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

AKHMANOV, S. A., KOVRIGIN, A. I., MAKSIMOV, S. A., and OGLUZDIN, V. YE., Moscow State University imeni M. V. Lomonosov

"Dispersion of Resonant Nonlinear Susceptibility in Potassium Vapors"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 186-191

Abstract: The article describes results of an experimental study of the dispersion of nonlinear susceptibility of potassium vapors near the transitions $4S_{1/2} - 4P_{3/2}$ ($\nu_{01} = 13043$ cm^{-1}) and $4S_{1/2} - 4P_{1/2}$ ($\nu_{02} = 12985$ cm^{-1}). The use of a frequency-tunable, high-power pulse, parametric light oscillator as the source for the observation of self-modulation, self-focusing, and self-defocusing effects made it possible for the first time to trace the dispersion of the modulus and sign of nonlinear susceptibility in the entire frequency range $\nu = \nu_{01}$; $\nu_{01} > \nu > \nu_{02}$; $\nu < \nu_{02}$. The strong effect of nonlinearity saturation and group velocity dispersions was pronounced in the experiments.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 621.373.8

KOVRIGIN, A. I., NIKLES, P. V.

"A Nonresonator Parametric Light Emitter Based on a Crystal of α-HIO_3"

Pis'ma v ZhETF (Letters to the Journal of Experimental and Theoretical Physics), 1971, 13, No 8, pp 440-443 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D349)

Translation: The paper describes a cavityless parametric light generator with continuous frequency tuning in a range of 1-1.3 μ, and with an energy conversion factor of 57 percent. Experimental realization of such a generator requires the use of highly effective nonlinear crystals. A crystal of α-HIO_3 is used. The width of the spectrum of the output emission was 0.2 cm^{-1}. The directivity of the emission is approximately 4 min. The cavityless parametric light generator circuit can readily be converted to a parametric light generator with a resonator for one frequency. A. K.

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USSR

UDC 538.23

KOVRIGIN, V. I., SUDAKOV, N. I., Krasnoyarsk Institute of Nonferrous Metals imeni M. I. Kalinin

"Study of Dependence of Rotary Hysteresis Losses on Magnitude of Magnetic Field in Nickel-Germanium Single Crystals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 2, 1970, pp 103-106

Abstract: The article describes results of a study of rotary hysteresis losses as a function of the magnitude of the magnetic field at room temperature in single crystals of nickel-germanium alloy. A single crystal of pure nickel was also studied for comparison. As far as is known, this is the first time such studies have been made on nickel-germanium single crystals. The rotary hysteresis losses were studied by measuring the mechanical moments acting on a sample placed in a homogeneous magnetic field as it rotates forward and backward in a crystallographic plane (100). The mechanical moments were measured on a torque magnetometer, as well as by automatic photo-recording. It was found that rotary hysteresis losses increase with an increase in the field, reaching a maximum in the field, reaching a maximum in 800-1500 oe fields, then decline and reach zero value in 2000-3000 oe fields. The lower the germanium concentration of

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KOVRIGIN, V. I., SUDAKOV, N. I., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 2, 1970, pp 103-106

the single crystal is, the higher is the maximum loss value. An increase in the germanium concentration shifts the maximum rotary hysteresis loss towards lower fields. Slight additions of germanium in nickel have a significant effect on the value of the anisotropy constant. There is a proportional relationship between variations in the anisotropy constant according to germanium content and saturation magnetization.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CORRELATION OF LOSSES DUE TO ROTATIONAL HYSTERESIS WITH THE MAGNETIC FIELD STRENGTH IN NICKEL GERMANIUM SINGLE CRYSTALS -U-

AUTHOR-(02)-KOVRIGIN, V.I., SUDAKOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 103-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL SINGLE CRYSTAL, NICKEL, GERMANIUM, CRYSTAL ANISOTROPY, MAGNETIC HYSTERESIS, MAGNETIC FIELD EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1908 STEP NO--UR/0139/70/013/002/0103/0106

CIRC ACCESSION NO--AT0114348

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

UNCLASSIFIED PROCESSING DATE--29OCT70

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CIRC ACCESSION NO--AT0114348

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOSSES WERE STUDIED IN RELATION TO THE VALUE OF THE MAGNETIC FIELD AT ROOM TEMP. FOR NIGE SINGLE CRYSTALS AND FOR A SINGLE CRYSTAL OF PURE NI FOR COMPARISON. IN THE (100) PLANE OF THE NIGE SINGLE CRYSTALS, THE LOSSES INCREASE AS THE FIELD IS INCREASED, REACHING A MAX. AT 800-1500 OE, AND THEN THEY DECREASE, REACHING ZERO AT 2-3 KOE. THE MAX. VALUE OF THE LOSS IS GREATER, THE LOWER THE GE CONCN. THE MAX. LOSS SHIFTS TOWARD LOWER FIELDS AS THE GE CONCN. IS INCREASED. EVEN SMALL AMTS. OF GE IN NI HAVE A MARKED EFFECT ON THE ANISOTROPY CONSTS. THE CHANGE IN THE ANISOTROPY CONST. IS PROPORTIONAL TO THE SATN. MAGNETIZATION. FACILITY: KRASNOYARSK. INST. TSVET. METAL. IM. KALININA, KRASNOYARSK, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF DIPOLE MOMENTS OF ALIPHATIC ACID MOLECULES -U-

AUTHOR-(02)-KOVRIGINA, L.P., BOGDANOV, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(6), 1571-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIPOLE MOMENT, FATTY ACID, DIELECTRIC PROPERTY, ENTROPY, ENTHALPY, ALIPHATIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/F02 STEP NO--UR/0076/70/044/006/1571/1573

CIRC ACCESSION NO--AP0140328

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140328

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIPOLE MOMENTS AND RELAXATION TIMES FOR 14 STRAIGHT CHAIN FATTY ACIDS WERE DETD. IN LOW CONCN. DIOXANE SOLNS. FOR A ERIES OF 12 ACIDS, THE DIELEC. CONSTS. AND DIELEC. LOSS FACTORS WERE MEASURED AT 20-140DEGREES. BASED ON THE EXPTL. DATA, THE DEPENDENCE OF DIELEC. CONSTS. AND DIELEC. LOSS FACTORS ON MOL. WT., CLCD. CORRELATION FACTOR, EQUIL. CONST., ACTIVATION ENERGY, ENTHALPY, AND ENTROPY WERE ESTABLISHED.

FACILITY: MOSK. OBL. PEDAGOG. INST. IM. KRUPSKOI, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INHIBITION OF THE OXIDATION OF ISOPRENE RUBBER BY QUINONE IMINES -U-

AUTHOR-(05)-RAEVSKIY, A.B., ROMANOVA, A.B., YESINA, T.I., SHISHKINA, V.V., KOVRIZHKO, L.F.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA, 1970, 29(3), 9-10

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXIDATION INHIBITION, ISOPRENE, QUINONE, IMINE, SYNTHETIC RUBBER, EPR SPECTRUM, FREE RADICAL/(U)SKI3 POLYISOPRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0453 STEP NO--UR/0138/70/029/003/0009/0010

CIRC ACCESSION NO--AP0119389

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF SIMILAR TO 1.0PERCENT N, N-DIPHENYL,P,BENZOQUINONEDIIMINE (I) OR N,BETA,NAPHTHYL,P,BENZOQUINONEDIIMINE (II) TO SKI-3 (POLYISOPRENE RUBBER) IMPROVED ITS RESISTANCE TO OXIDN. AT 120DEGREES. EPR SPECTROSCOPY SHOWED THAT I AND II FORM, DURING HEATING, FREE RADICALS OF LARGE MOL. WTS., WHICH PARTICIPATE IN THE INHIBITION OF SKI-3 OXIDN.

FACILITY: VORONEZH, FILIAL VSES. NAUCH.-ISSLED., INST. SIN. KAUCH, IM. LEBEDEVA, VORONEZH, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/3 045 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INCREASE IN THE INTENSITY OF SOLAR PROTONS MEASURED ON THE 'PROTON 3' ARTIFICIAL EARTH SATELLITE -U-

AUTHOR-(04)-ZELDOVICH, M.A., KOVRIZHNYKH, O.M., MADEYEV, M.O., SAVENKO, I.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MOSKOVSKOGO UNIVERSITETA, FIZIKA, ASTRONOMIYA, NO 2, 1970, PP 229-230

DATE PUBLISHED--------70

SUBJECT AREAS--SPACE TECHNOLOGY, PHYSICS, ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--PROTON, SOLAR FLARE, RADIO EMISSION, SPACECRAFT CARRIED EQUIPMENT, QUARK, PRIMARY COSMIC RAY, PROPORTIONAL COUNTER, TELESCOPE, SPECTRUM, SOLAR RADIATION BURST, SOLAR RADIATION INTENSITY, RADIATION MEASURING INSTRUMENT/(U)SEZ 13 INSTRUMENT, (U)PROTON 3 SCIENTIFIC SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0860 STEP NO--UR/0188/70/000/002/0229/0230

CIRC ACCESSION NO--AP0126529

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/3 045 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126529

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEZ-13 INSTRUMENT CARRIED ABOARD THE "PROTON 3" INSTRUMENT ON 7 JULY 1966 REGISTERED AN INCREASE IN PROTON INTENSITY IN THE ENERGY RANGE 100 TO 1,000 MEV. THE INTEGRAL SPECTRUM OF SOLAR PROTONS HAS THE FORM N SIMILAR TO E PRIME NEGATIVE1.5. AN OPTICAL FLARE OF THE IMPORTANCE 2B ON THAT DATE LASTED ABOUT TWO HOURS. THIS FLARE WAS ACCOMPANIED BY AN X RAY BURST AND TYPES II AND IV RADIO EMISSION. THIS ARTICLE GIVES THE RESULTS OF MEASUREMENTS OF THE BURST OF SOLAR PROTONS ON 7 JULY 1966 WITH INSTRUMENTATION CARRIED ABOARD "PROTON 3". THIS SATELLITE WAS LAUNCHED ON 6 JULY 1966 IN A CIRCUMTERRESTRIAL ORBIT WITH AN APOGG OF 630 KM, APOGEE OF 190 KM AND ORBITAL INCLINATION OF 64DEGREES. THE SATELLITE CARRIED NO INSTRUMENT SPECIALLY DESIGNED FOR MEASURING LOW ENERGY PROTONS. ACCORDINGLY, DATA ON THE BURST OF 7 JULY WAS OBTAINED AS A RESULT OF MEASUREMENTS WITH THE SEZ-13 INSTRUMENT, WHOSE BASIC PURPOSE WAS A SEARCH FOR QUARKS IN PRIMARY COSMIC RAYS BEYOND THE LIMITS OF THE ATMOSPHERE. THE SEZ-13 INSTRUMENT CONSISTS OF 12 PROPORTIONAL COUNTERS FORMING A TELESCOPE. THE PROTONS COULD ENTER THE TELESCOPE ANGLE OF VIEW FROM TWO OPPOSITE DIRECTIONS. A LATITUDINAL INTENSITY VARIATION WAS OBSERVED BECAUSE THE SATELLITE INTERSECTED GEOGRAPHIC LATITUDES FROM 0 TO 64DEGREES. IT WAS CONFIRMED THAT THE SPECTRUM OF SOLAR PROTONS HAS THE FORM N SIMILAR TO E PRIME NEGATIVE 1.5.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

3/3 045 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126529

ABSTRACT/EXTRACT--PRELIMINARY DATA INDICATE THAT THE INTENSITY OF GALACTIC COSMIC RAYS WITH ENERGIES IS GREATER THAN 1,000 MEV AND WITH ENERGIES IS GREATER THAN 10,000 MEV IS 0.64 PARTICLE CM PRIME NEGATIVE1. SEC PRIME. NEGATIVE1. STERAD PRIME NEGATIVE1 AND 0.127 PARTICLE CM PRIME NEGATIVE2. SEC PRIME NEGATIVE1. STERAD PRIME NEGATIVE1. THESE INTENSITIES CAN BE SOMEWHAT EXAGGERATED BECAUSE NO ALLOWANCE WAS MADE FOR SECONDARY RADIATION FORMING DURING THE ABSORPTION OF HIGH ENERGY GALACTIC COSMIC RAYS IN THE MATERIAL OF THE SATELLITE. FACILITY: NUCLEAR PHYSICS SCIENTIFIC RESEARCH INSTITUTE, MOSCOW UNIVERSITY.

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UDC 535.4

USSR

BOKOVA, K. M. and KOVRIZHNYKH, Yu. T., Sverdlovsk Gospedinstitut

"Some Simple Demonstrations in Wave Optics With a He-Ne Laser"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy--Fizika, No 11, 1972, pp 122-123

Abstract: The purpose of this brief communication is to show how an improvement in the interference pattern produced by a Fresnel double prism can be obtained through the use of laser rather than ordinary light sources. The diagram of a system designed to demonstrate that fact is shown and an explanation of its operation given. Such a system can be used in a lecture hall in a physics class for studying the wave phenomenon of light. Photographs are reproduced of interference bands obtained with the use of an LG-75 laser and of the diffraction pattern from three-millimeter steel balls.

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13

USSR

UDC 669.245.018.44(088.8)

PANASYUK, I. O., BRUSILOVSKIY, B. S., VILKOV, V. I., VORONIN, G. M., YEGOROV, YE. YE., YELKIN, I. S., KLIMOV, L. YA., KOVROVA, YE. A., KONTSEVAYA, YE. M., LYUBINSKAYA, M. A., MILENINA, YE. G., MIKHAYLOV, I. A., RAZUVAYEV, YE. I., SIROTKIN, A. I., SOLDATCHENKO, V. A., SPILITSIN, R. I., SHAPIRO, S. M.

"Nickel-Chromium Base Alloy"

USSR Author's Certificate No 276418, Filed 2 Jun 69, Published 16 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I766P)

Translation: The heat-resistant alloy has the following composition (in %): C 0.03-0.1, Cr 30-40, W 3-5.5, Mo 2-4, Ti 0.5-1.5, Al 0.5-1.5, Nb 0.5-1.5, Ce 0.01-0.3, B 0.003-0.008, Ni, the rest. The alloy has increased heat resistance and also the following mechanical and physical-chemical properties at 1,100°: σ_B 8 kg/mm^2, δ 65%, $\sigma_{stress-rupture}$ 1 kg/mm^2, coefficient of linear expansion $15 \cdot 10^{-6}$ deg^{-1}, increase in weight after 100 hours of heating at 1,200° in the air 0.6 g/m^2. It is corrosion-resistant in a moist atmosphere under tropical conditions, in sea water, and in the products of combustion of highly sulfurous fuel.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 535.231.4

ARIFOV, U. A., RAKHIMOV, R. R., VERGUN, V. R., and KOVEIYAZHENKOV, I. M.,
Electronics Institute, Academy of Sciences Uzbek SSR

"Variations in the Emissivity of a Surface During Bombardment With Atomic Oxygen Ions"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1973, pp 73-76

Abstract: The article describes results of a study of the effect of atomic oxygen ion fluxes on the emissivity of the surface of an enamel coating with an emittance of $\varepsilon = 0.9$ in the 100-ev energy region. The instrument used for the study differed from one previously used by the authors for molecular fluxes in the design of the ion source and in a somewhat different measurement sequence. It was found that bombardment with atomic oxygen ion fluxes leads to an increase in the emissivity of the surface. A comparison of the results obtained for the case of bombardment with molecular and atomic fluxes showed that the change in ε of the coating is identical in character, differing only in the quantitative values for the same flux density. Ionic bombardment

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

ARIFOV, U. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1973, pp 73-76

with atomic fluxes is less effective: the emissivity of the coating reaches the maximum after a longer time interval, and the value of the maximum for ε is appreciably less than in the case with molecular fluxes.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

UDC 621.378.325

BOGDANKEVICH, O.V., BORISOV, N.A., KALENDIN, V.V., KOVSH, A.R., KRYUKOVA, I.V.

"Kinetics Of Reproduction Of Luminescent Properties Of GaAs Single Crystals Irradiated By An Intense Beam Of Electrons"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(21), 1972, pp 108-111

Abstract: In previous papers by the authors, studies of the principal characteristics of a GaS laser with pumping by a beam of electrons with an energy up to 1 Mev (i.e., above the threshold for formation of defects) showed that with a sufficiently prolonged operation of the laser in such a regime, a decrease of power was observed at approximately 30--50 percent. However, annealing of the crystals at room temperature over several hours leads to practically a complete reduction of it. In the present work now results are reported concerning improvement of the radiating power of GaAs after irradiation by intense electrons. Irradiation of the single crystal was conducted at 300° K with the following parameters of the electron beam: energy of electrons, 600 kev; current density in beam, 20--30 a/cm²; duration of current impulse, 15 nanosec; and recurrence frequency, 1--2 Hz. Before and after irradiation the spectra were studied of the photoluminescence of specimens in the 0.75--1.2 micron region at 77° K and as the change of the laser threshold of generation with excitation by electrons,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

BOGDANKEVICH, O.V., et al., Kvantovaya elektronika, Moscow, No 5(11), 1972, pp 108-111

and a 50 kev energy at 300° K. The specimens had the form of a rectangular parallelepiped: length of resonator 0.5--1 mm, thickness 0.[illegible] mm, width [illegible] mm. The gallium arsenide was grown by the Czochralski method and doped with tellurium to a concentration of 5. 10^{17} cm^{-3} as well as by the liquid epitaxy method (without doping) with a concentration of carriers of 1.2 . 10^{17} cm^{-3} and a mobility of 46,000 cm^2/sec at 77° K. (The total concentration of impurity in these specimens amounted to 10^{16} cm^{-3}.) An increase of photolumi[illegible] intensity and a decrease of the laser threshold was observed in the n-GaAs. These changes depend on the intensity and dose of irradiation and the parameters of the initial material. In the non-doped epitaxial specimens an improvement of the luminescent properties was not observed. A qualitative explanation is given of the observed effects. The authors thank O.N. Grigor'yev for measurement of the spectrum of x-ray reflection. 3 fig. 8 ref. Received by editors, [illegible] 1972.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

UDC: 621.375.85

DANILYCHEV, V. A., KERIMOV, O. M., and KOVSH, I. B.

"CO_2 Laser With Electro-Ionization Pulse"

Moscow, Pribory i tekhnika eksperimenta, No 1, 1973, pp 184-185

Abstract: The laser described in this paper is distinguished by its high power and high efficiency. Using a small volume of the operating gas -- carbon dioxide -- radiated power of 1 MW is easily obtained together with a simple method of varying the duration of the radiating pulse between 0.1 and 5 μsec through a change in pressure of the CO_2. Such lasers can be used for investigating the interaction of powerful radiation with materials. A diagram of the laser chamber in cross section is given and its construction discussed. Since a radiation density of more than 10^4 MW/cm^2 can be easily attained with focusing, the device can be used for investigating optical breakdown of gases and transparent dielectrics.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

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BASOV, N. G., ERIEMOV, E. M., DANILYCHEV, V. A., KEREMOV, O. M., KOVSH, I. B., and SUCHKOV, A. F., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Gas Lasers at High Pressures"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 7, 5 Oct 71, pp 421-426

Abstract: A gas laser, operating at pressures of tens of atmospheres and high-power, short-duration pulses is described. Its active part is excited by electrons from an ionizing radiation source, accelerated further by an electric field. Essential problems to be solved are: 1) mechanism of the introduction of energy, and 2) conditions of stability of operation not perturbed by [illegible] processes.

1) Power in the active part of the laser may be divided into two components: one due to the electron current, and another - to both ions and electrons. It was found that in normal operation, the former is several orders of magnitude lower than the latter. A set of partial differential equations is given, the solution of which establishes conditions for the avalanche gas ionization. It was also found that in normal operation the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

BASOV, N. G., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 7, 5 Oct 71, pp 421-426

potential gradient along the discharge sector, including the cathode drop, was constant. Typical parameters of laser operation are given: with a pulse length of 2×10^{-8} sec, electron particle density 10^{15} cm^{-3}, the discharge specific energy is 3 to 4 joule cm^{-3}.

2) With the potential being larger than its breakdown value, volume discharge is stable during the spark generation period. Cases were examined for the potential difference being below that value. As with an increase of current, the temperature increases, leading to a decrease of pressure, and the breakdown gradient can reached. The dynamics of this type of perturbation is described by three partial differential equations, and computation of the energy needed to produce a discharge with the initial potential difference half the critical value is performed as an illustration. This type of relationship is used as a criterion of stability. Graphs are presented giving threshold voltage as a function of pressure for mixtures of $CO_2:N_2$ and of $CO_2:N_2:He$.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

BASOV, N. G., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 7, 5 Oct 71, pp 421-426

3) An experiment was performed with a molecular laser using CO_2 at 25 atmospheres, with electron bunches as triggers. It was found that quenching collisions produced little effect upon the population inversion in CO_2 at high pressure. It was found, however, that with an increase of pressure, the breakdown voltage increased across the discharge sector, and the specific energy input increased too. Increased collision frequency, accompanying the increase of pressure, reduces the generation pulse length.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

Acc. Nr: AP0051945 Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 4, pp 297-300

CHEMICAL STUDIES ON SIBIROMYCIN, AN ANTITUMOR ANTIBIOTIC

M. G. Brazhnikova, I. N. Kovsharova, N. V. Konstantinova, A. S. Mezentsev, V. V. Proshlyakova, I. B. Tolstykh

Institute for New Antibiotics of USSR Academy of Medical Sciences, Moscow

A new antibiotic named sibiromycin was isolated. It has the following empirical formula: $C_{24-25}H_{33-35}N_3O_{6-7}$, $\lambda_{max}^{CH_3OH}$. 230 and 310 mμ. Sibiromycin possesses amphoteric properties, pKa 7.5 (in 75 per cent ethanol). It contains 1 amino, 3 C-methyl and 2-acetylating groups. A crystalline sulfur containing derivative with a composition of $C_{24-25}H_{33-35}N_3SO_{8-9}$ and a melting point of 203°, was prepared. The ultraviolet spectrum is identical to that of an antibiotic, $[\alpha]_{Д}^{20}$ 100±2° (c. 0.15, DMPhA).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--OVERHEAT EFFECT OF CORTISONE ON THE MAST CELLS OF ALBINO RAT MESENTERY -U-

AUTHOR--KOVSHAROVA, S.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA BIOLOGICHESKIKH NAUK, 1970, NR 1, PP 73-75

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CORTISONE, WHITE RAT, BIOLOGIC THERMAL EFFECT, HYPERTHERMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1936/1474 STEP NO--UR/0296/70/000/001/0073/0075

CIRC ACCESSION NO--AP0103305

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 026

CIRC ACCESSION NO--AP0103305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REGIONAL MEDICINE RESEARCH INSTITUTE OF THE TURKMEN SSR ACADEMY OF SCIENCES, WHEN DETERMINING THE HIGH TEMPERATURE EFFECT UPON THE MAST CELL SYSTEM OF ALBINO RAT MESENTERY, DISCOVERED A CERTAIN REACTION OF MAST CELL ORGANS OF TRAINED BY HEAT ANIMALS AND THE DEPENDENCE OF AMOUNT OF CELLS AND DEGRANULATION DEGREE UPON THE HYPERTHERMIA LEVEL. IT HAS BEEN ASCERTAINED THAT HIGH TEMPERATURE CHANGES SIZES AND FORMS OF MAST CELLS, INCREASES DEGRANULATION. INTRODUCTION OF CORTISONE RELAXES THE REACTION OF MAST CELLS AT HYPERTHERMIA.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF CORTISONE ON THE MAST CELLS OF MESENTERY DURING OVERHEATING -U-

AUTHOR--KOVSHAROVA, S.I.

K

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. BIOL. NAUK 1970; 1, 73-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PERITONEUM, CORTISONE, TISSUE CULTURE, CELL PHYSIOLOGY, BIOLOGIC THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0103 STEP NO--UR/0296/70/001/000/0073/0075

CIRC ACCESSION NO--AP0119099

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEGRANULATION AND ALTERATIONS IN SIZE AND SHAPE OF RAT MESENTERIC MAST CELLS WERE FOUND FOLLOWING AN OVER HEATING (45DEGREES FOR 1 HR, 46PERCENT OF CELLS DEGRANULATED), CORTISONE (50 MG-KG I.M., 34PERCENT OF CELLS DEGRANULATED), AND CORTISONE PLUS OVERHEATING (51PERCENT OF CELLS DEGRANULATED). A PRIOR ADAPTATION TO HIGH TEMP. DID NOT ALTER THE RESPONSE TO CORTISONE PLUS OVERHEATING.

FACILITY: INST. KRAEV. MED., ASHKHABAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 519.217

ALEKSANDROV, Yu. S., KOVSHEL', M. N., SELIVOKHIN, O. S., SOROKIN, A. V.

"Synthesis of Statistically Optimal Automatic Systems"

Nelineyn. i Optimal'n. Sistemy [Nonlinear and Optimal Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 104-119, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V127).

NO ABSTRACT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

UDC 548.0:532.783

RYUMTSEV, Ye. I., KOVSHIK, A. P., KOLOMIYETS, I. P., TSVETKOV, V. N.,
Physics Institute, Leningrad State University

"Anisotropy of Molar Refraction of Liquid-Crystal Alkoxybenzoic Acids"

Moscow, Kristallografiya, Vol 18, No 6, Nov/Dec 73, pp 1246-1249

Abstract: The prism refractor method is used to measure the indices of refraction of nematic and amorphic liquids of a homologous series of alkoxybenzoic acids. The values of molar refraction and its anisotropy are calculated for each homolog in the entire region of existence of the nematic phase. The resultant relations for refraction anisotropy as a function of the structure of the molecules are explained by the effect of flexibility -- a phenomenon which is well known for chain molecules.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC 532.783

TSVETKOV, V. N., Corresponding Member of the USSR Academy of Sciences, RYUMTSEV, Ye. I., KOLOMIYETS, I. P., KOVSHIK, A. P., Leningrad State University imeni A. A. Zhdanov

"Concerning the Macroscopic Equivalence and Difference of Molecular Mechanisms of the Orienting Action of Electric and Magnetic Fields on Nematic Liquid Crystals"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 4, 1 Aug 73, pp 821-824

Abstract: The electric-to-magnetic susceptibility anisotropy ratios were measured by the crossed-field method on a frequency of $\nu = 7 \cdot 10^5$ for several liquid crystals, and the permittivities parallel and perpendicular to the axis of nematic order were determined by the method of capacitance on the same frequency. In addition, the diamagnetic anisotropy was measured on the same substances. The resultant experimental data show that anisotropy of retardation of molecular rotation reduces the dielectric anisotropy of positively anisotropic liquid crystals and increases the anisotropy of negatively anisotropic crystals. When the dipole moment is fairly high, dispersion may change the sign of electric susceptibility anisotropy in a crystal with positive dielectric anisotropy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR

KOVSHOV, G. N., TOLSTONOGOV, A. A.

"Selection of an Optimal Form for the Pendulum of a Linear Acceleration Sensor"

Tr. Ufim. Aviats. In-ta., [Works of the Ufim Aviation Institute] 1971, vol 18, pp 111-118. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1A200).

Translation: Among bodies of rotation, a body is sought having the minimum moment of inertia relative to the axis of suspension with a fixed static moment. It is shown that among the shapes described by the equations

$$x^2+z^2=f^2(y),\quad x^2+(y-l)^2=f^2(y),\quad (y-l)^2+z^2=f^2(y)$$

where f(·) is the equation of the generatrix, the last form is optimal.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

USSR UDC: None

MERMANISHVILI, L. L., TIGILAURI, G. A., SIMONISHVILI, T. G., KVANTALIANI, G. A., and KOVSHOV, L. F.

"Device for Recording Information on Electrochemical Paper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrastsy, tovarnyye znaki, No 4, 1973, p 117, No 364003

Translation: The item contains number registers connected with decoders whose outputs are joined to shapers connected through AND circuits with the inputs of the recording unit, which is connected with scaling and synchronization units, distinguished in that, for the purpose of providing printed information in the form of combinations of points in two colors, it contains an automatic marking unit connected with the inputs of a nulling device for the number registers and with controlling inputs from each of the decoders.

The device of paragraph 1 above is distinguished in that the count input of the channel counter in the automatic marking unit is connected, through one of the delay lines, to one of the AND and OR circuits respectively, the outputs of which are connected through a decoder to the second inputs of the AND circuits, whose outputs are connected with the other inputs of the OR circuits.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

Instruments and Measurements

USSR UDC 621.378.3

DUBNISHCHEV, YU. N., KOVSHOV, YU. M., Novosibirsk

"Laser Doppler Velocity Meter Insensitive to the Geometry of the Incident Beam"

Novosibirsk, Avtometriya, No 3, 1971, pp 87-90

Abstract: A new method of obtaining minimum instrument broadening of the doppler spectrum in laser doppler velocity meters is described. It consists in measuring the doppler frequency by obtaining the frequency beats on a photographic film from the isolated beams scattered by an object the velocity of which is subject to measurement. The instrument broadening of the doppler spectrum in this case is independent of the geometry of the incident beam and is determined by the apertures of the signal beams. In systems of this type the instrument broadening of the spectrum can be very small since the minimum size of the apertures of the signal beams is determined only by the sensitivity of the photoreceiver used. The schematic of the device implementing the new method, its operating theory and experimentally obtained doppler spectra are presented. A relative spectral width on the order of 9% was obtained under the given experimental conditions, demonstrating the usefulness of the described system when it is necessary to exclude the effect of the geometry of the incident beam on the measurement accuracy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201520017-1

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE INSTITUTE AND THE PLANT -U-

AUTHOR-(02)-KOVSKIY, B., KHAIS, A.

COUNTRY OF INFO--USSR

SOURCE--VODNYY TRANSPORT, JULY 9, 1970, P 2, COLS 4-6

DATE PUBLISHED--09JUL70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ENGINEERING INSTITUTE, MERCHANT MARINE STATUS, R AND D COOPERATION, SHIPBUILDING ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1090 STEP NO--UR/9028/70/000/000/0002/0002

CIRC ACCESSION NO--AN0121654

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES THE COOPERATION BETWEEN THE ODESSA SHIP REPAIRS PLANT AND THE FACULTY OF THE ODESSA INSTITUTE FOR MERCHANT MARINE ENGINEERS. DOCENT N. IVASHOVA, CANDIDATES OF TECHNICAL SCIENCES P. STEFANOVICH AND A. AKSEL, BAND, AND ENGINEER G. SHVORINA, ALL WITH THE INSTITUTE, ARE PARTICULARLY EFFECTIVE IN IMPROVING THE PRODUCTIVE EFFICIENCY OF THE PLANT. L. KUNIN, M. POLYAKOV, M. SHKOLYAR, AND M. MAYDENBERG ARE PLANT'S EXPERTS WHO WORK HAND IN HAND WITH THE INSTITUTE'S PEOPLE. A. KOSTYUKOV, PROFESSOR, PRESIDENT OF THE INSTITUTE, DOCTOR OF TECHNICAL SCIENCES, V. ZACORUYKO, DEAN OF THE SCHOOL OF MARINE MECHANICS, YE. OVCHARENKO, HEAD, CHAIR OF MARINE ARCHITECTURE, YU. FOMIN, PROFESSOR, L. BURYSHKIN, DOCENT, AND A. ANDREYEV, DOCENT ARE ALSO MENTIONED. THE LATTER THREE PERSONALITIES ARE ASSOCIATED WITH THE CHAIR OF INTERNAL COMBUSTION ENGINES. FACILITY: ODESSA INSTITUTE FOR MERCHANT MARINE ENGINEERS. FACILITY: ODESSA SHIP REPAIRS PLANT.

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