

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF SAMPLE INHOMOGENEITY ON THE BEHAVIOR OF THE
SUSCEPTIBILITY OF THE SYSTEM NEAR THE CRITICAL POINT --
AUTHOR--(02)--YESIPOV, V.S., MIKULINSKIY, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2176-2183
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC SUSCEPTIBILITY, FIELD THEORY, THEORETIC PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1692

STEP NO--UR/0055/70/058/006/2176/2183

CIRC ACCESSION NO--AP0120404

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0120404

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY THE SELF CONSISTENT FIELD THEORY METHOD IT IS SHOWN THAT INHOMOGENEITY OF THE SAMPLE APPRECIABLY AFFECTS THE BEHAVIOR OF THE MAGNETIC SUSCEPTIBILITY NEAR THE CRITICAL POINT. AT THE POINT T SUBC1 AT WHICH INFINITE REGIONS WITH A STABLE ORDER PARAMETER η ARISE, THE SUSCEPTIBILITY POSSESS A WEAK UNOBSERVABLE NONANALYTICITY. AT THIS POINT THE MEAN VALUE OF η OVER THE SAMPLE IS ZERO. AT THE POINT T SUBC2, IN WHICH A NONVANISHING ORDER PARAMETER THROUGHOUT THE SAMPLE ARISES, THE SUSCEPTIBILITY IS INFINITE BUT THE PEAK WIDTH IS VERY SMALL. FACILITY: INSTITUT FIZIKO-TEKHNICHESKIY I RADIOTEKHNICHESKIKH IZMERNENY.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--BEHAVIOR OF HIGH ORDER CORRELATORS NEAR PHASE TRANSITION POINTS OF
THE SECOND KIND -U-
AUTHOR--MIKULINSKIY, M.A. *M*

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1848-1852
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHASE TRANSITION, SECOND ORDER PHASE TRANSITION, SCALING LAW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0027

STEP NO--UR/0056/70/058/005/1848/1852

CIRC ACCESSION NO--AP0127677

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORRELATORS OF FOUR SPINS ARE CALCULATED EXACTLY IN THE TWO DIMENSIONAL ISING MODEL. THE RESULTS OF THE CALCULATIONS ARE COMPARED WITH THE PREDICTIONS OF THE SCALING THEORY. IN ALL CASES THE SCALING THEORETICAL CONCLUSIONS ARE CONFIRMED BY EXACT CALCULATIONS. FACILITY: INSTITUT FIZIKO-TEKHNICHESKIKH I RADIOTEKHNICHESKIKH IZMERENIY.

REF ID: A61114

Organometallic Compounds

USSR

UDC 547.242+542.957

MIKUL'SHINA, V. V., NESMEYANOV, N. A., and REUTOV, O. A., Academician, Moscow State University imeni M. V. Lomonosov

"Reactions of Arsonium Salts With Organolithium Compounds"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 596-598

Abstract: In reactions of arsonium salts with organolithium compounds, the initial arsonium salt alkylates the ylide and is regenerated upon completion of the reaction. Heating decomposes the ylide. A 50% to 100% excess of $C_6H_5CH_2Li$ reacted with $(C_6H_5)_4As^+Br^-$ in tetrahydrofuran to yield diphenylmethane; 1,2-diphenylethane; diphenyl; triphenylarsine (80%); and benzene. An excess of methyllithium with tetraphenylarsonium bromide yields methane, trimethylarsine, dimethylphenylarsine, methyltriphenylarsine, triphenylarsine as well as diphenylmethane, 1,2-diphenylethane, diphenyl, and benzene. Butyllithium heated with benzyltriphenylarsonium iodide yields triphenylarsine, trans-stilbene, diphenyl, diphenylmethane, 1,2-diphenylethane, butyldiphenylarsine, and dibutylphenylarsine. Thus, unlike analogous phosphorus compounds, compounds of pentavalent arsenic do not decompose into hydrocarbon and ylide.

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USSR

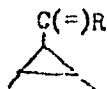
UDC 542.957+547.242+547.512

NESMEYANOV, Nik. A., and MIKUL'SHTINA, V. V.

"Reactions of Stable Arsenic Ylides with Activated Double Bonds and the Synthesis of Trisubstituted Cyclopropanes"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 4, Apr 71, pp 696-699

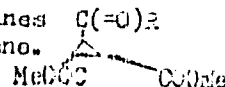
Abstract: By reacting the stable As ylides $\text{Ph}_3\text{As}=\text{CHC}(=\text{O})\text{R}$ (I; R = Me, OMe, Ph) with transdibenzoylene (II) and the dimethyl ester of fumaric acid (III), difficultly accessible trisubstituted cyclopropanes with electron-acceptor substituents in the 1, 2, and 3 positions were obtained with good yields. Ph_3As formed from compounds I in the reactions. The As ylides were prepared from arsonium salts as described by Nesmeyanov et al. in Dokl. Akad. Nauk SSSR, 155, 1964, 1964. On reacting compounds I (R = Me, OMe, Ph) with II, the cyclopropanes



(R = Me, OMe, Ph) were obtained. The reaction of



compounds I (R = Me, OMe) with III led to the cyclopropanes $\text{C}(=\text{O})\text{R}$ (R = Me, OMe). The reactions were carried out in anhydrous benzene.



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USSR

NESMEYANOV, Nik. A., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 4, Apr 71, pp 696-699

Ph_3As could be isolated in the form of its iodomethylate. Thermal or photochemical decomposition of I ($\text{R} = \text{Ph}$) in benzene led to the formation of 1,2,3-tribenzoylcyclopropane and Ph_3As . The first stage of this reaction apparently consisted of the formation of a carbene.

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1/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--APPEARANCE OF THE PIEZOELECTRIC EFFECT IN MINERALS OF THE SILICATE

GROUP -U-

AUTHOR--MIKULSKAYA, YE.K.

M

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (2), 99-108

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--MINERAL, SILICATE, PIEZOELECTRIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/1518

STEP NO--UR/0011/70/000/002/0099/0108

CIRC ACCESSION NO--AP0120299

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PIEZOELEC. EFFECT WAS DETECTED IN 61 MINERAL SPECIES OF THE SILICATE CLASS, I.E. EVERY 2ND SILICATE WITHOUT SYMMETRY CENTER POSSESSED PIEZOELEC. EFFECT. THE DISTRIBUTION OF SILICATE PIEZOELEC. CRYSTALS AMONG SUB CLASSES COINCIDED WITH THAT AMONG THE SUBCLASSES OF MINERALS WITH NONCENTROSYM. STRUCTURE. THE LARGEST NO. OF PIEZOELEC. CRYSTALS (32 MINERAL SPECIES) WAS PRESENT AMONG FRAMEWORK SILICATES. THE OTHER SILICATES PIEZOELEC. CRYSTALS WERE DISTRIBUTED AS FOLLOWS: NESOSILICATE WITH ISOLATED SiO_4 SUB4 TETRAHEDRONS AND ADDN. ANIONS 3, SORSILICATES WITH ISOLATED LAYERS OF Si SUB2 O SUB7 GROUPS 5, CHAIN SILICATES 2, RING SILICATES 4, AND LAYERED SILICATES 15 MINERAL SPECIES. THE PIEZOELEC. CRYSTALS, WHICH BELONGED TO CERTAIN SPACE GROUPS, POSSESS SPONTANEOUS PYROELEC. POLARIZATION CAUSED BY RIGIDLY FIXED ELEC. DIPOLES. LARGE PERCENTAGES OF PIEZOELEC. CRYSTALS AMONG FRAMEWORK SILICATES AND RELATIVELY HIGH VALUE OF THEIR PIEZOELEC. MODULI SUGGEST THAT THIS SUBCLASS IS A PROMISING ONE FOR DISCOVERY OF VARIOUS NEW PIEZOELEC. MATERIALS. CRYSTALS OF NUMEROUS FRAMEWORK SILICATES (CANCRINITE, NEPHELINE, SODALITE, ZEOLITES, AND OTHER) CAN BE SYNTHESIZED BY HYDROTHERMAL METHOD. FACILITY: VSES. NAUCH. ISSLED. INST. SIN. MINER. SYR'TA, ALEKSANDROV, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SEPARATING RARE EARTH AND TRANSPLUTONIUM ELEMENTS FROM URANIUM
TARGETS IRRADIATED WITH HEAVY IONS -U-
AUTHOR-(03)-KUSH, V.K., MIKULSKI, J., SZCZEGLOWSKIY, J.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 401-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--URANIUM, ION BOMBARDMENT, SOLVENT EXTRACTION, RARE EARTH ISOTOPE, TRANSURANIUM ELEMENT, ORGANIC PHOSPHATE, PHOSPHORIC ACID, ORGANIC ACID, ORGANIC OXIDE, ALIPHATIC PHOSPHOROUS COMPOUND, CHEMICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1423

STEP NO--UR/0186/70/012/002/0401/0405

CIRC ACCESSION NO--AP0133375

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID METHOD IS PROPOSED FOR SEPG. RARE EARTH AND TRANSPLUTONIUM ELEMENTS FROM U TARGETS IRRADIATED WITH HEAVY IONS BY USING AN EXTN. WITH TRIBUTYL PHOSPHATE (I), TRI N OCTYLPHOSPHINE OXIDE (II), AND DI 2 ETHYLHEXYLPHOSPHORIC ACID (III). A PROCEDURE IS ALSO DESCRIBED FOR THE PREPN. OF THE THIN LAYER SPECIMENS, FOR ALPHA SPECTROSCOPY MEASUREMENTS. THE U TARGET TOGETHER WITH 5 MG AL IS DISSOLVED IN A HCL HNO SUB3 MIXT., THE SOLN. IS EVAPD., DISSOLVED IN 4 M HCL, AND EXTD. BY I. THE AQ. PHASE IS THEN EXTD. WITH 5PERCENT TOLUENE SOLN. OF II, THE SEPD. AQ. PHASE IS EVAPD. TO DRYNESS, THE RESIDUE IS DISSOLVED BY 0.01M HCL, AND EXTD. BY 50PERCENT SOLN. OF III. RE EXTN. FO THE SEPD. METALS FROM THE ORG. PHASE IS CARRIED OUT BY CONCD. HCL, THE AQ. PHASE IS NEUTRALIZED BY CONCD. NH SUB4 OH TO PH EQUALS 1 AND ELECTROLYZED FOR 3 MIN AT 0.9 A BY USING PT ANODE, PT OR AU CATHODE (THICKNESS 0.3 MM AND SURFACE 0.8 CM PRIMER). A 90PERCENT YIELD OF TRANSPLUTONIUM ELEMENTS (CONTG. 50PERCENT INITIALLY PRESENT RARE EARTH METALS) IS OBTAINED. THE WHOLE SEPN. OF TRANSPLUTONIUM ELEMENTS REQUIRES 15-20 MIN.

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USSR

UDC: 51

MIKUL'SKIY, V. Ye.

"A Problem of Substitutions"

Minsk, V sb. Planir. i prognozir. ekon. razvitiya (Planning and Prognosis of Economic Development--collection of works) No 3, 1973, pp 252-258 (from RZh--Matematika, No 1, 1974, Abstract No 1V513)

Translation: Let H be an arbitrary subset of set S_n of all substitutions of the symbols $1, 2, \dots, n$. Let $A = \|a_{ij}\|$ and $B = \|b_{ij}\|$ be given, symmetrical $n \times n$ matrices of real numbers. The $(H; A, B)$ problem of finding a substitution τ in H , minimizing the sum

$$\sum_{i,j=1}^n a_{ij} b_{\tau(i)\tau(j)}, \text{ is considered.} \quad (1)$$

It is shown that the problem of the back side of the board, the arrangement of equipment, the arrangement of the components of complex systems, one particular case of the quadratic problem of jobs, and other problems reduce to this problem. The author notes the equivalence of the $(H; A, B)$ problem to that of

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USSR

MIKUL'SKIY, V. Ye., Planir i prognozir. ekon. razvitiya, No 3, 1973,
pp 252-258

minimizing the linear form

$$\sum_{i=1}^m \alpha_i \beta_{\bar{z}}(i), \quad (2)$$

where $m = \frac{n(n-1)}{2}$ in a set $\mathcal{P}(H) \subset S_m$, which is obtained in the following way:

Let $\Delta = \{(i,j) \mid i \neq j; i,j = 1,2,\dots,n\}$, $\Omega = \{1,2,\dots,m\}$, $\varphi: \Delta \rightarrow \Omega$, φ being one-to-one. For $\tau \in S_n$ we define $\varphi(\tau)$ as the substitute for τ such that for any $j \in \Omega$ the symbol $\bar{z}(j)$ is obtained as the result of the following chain of transformations:

$$j \xrightarrow{\varphi^{-1}} (k, \underline{1}) \xrightarrow{\tau} (\tau(k), \tau(\underline{1})) \xrightarrow{\varphi} \bar{z}(j).$$

Let us now define $\mathcal{P}(H)$ as $\{\bar{z} \mid \bar{z} = \varphi(\tau), \tau \in H\}$. In the transition from expression (1) to the sum (2), it is taken that $\alpha_i = a_{k\underline{1}}$ and $\beta_i = b_{k\underline{1}}$, where $(k, \underline{1}) = \varphi^{-1}(i)$.

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MIKUL'SKIY, V. Ye., Planir i prognozir, ekon. razvitiya, No 3, 1973,
pp 252-258

By noting the equivalence of the two problems, we can solve the arbitrary (H;A,B) problem by using the algorithm presented in the work of V. I. Komlik and the author (in the collection Planir i prognozir. ekon. razvitiya -- Planning and Prognosis of Economic Development -- Minsk, No 3, 1973, pp 252-258) for finding the minimum of the linear form in an arbitrary set of substitutions from S_m . This algorithm is described and it is noted that some possibilities in the process of the operation of the algorithm for part of the subsets of set S_m should not be overlooked. There are no calculations of the difficulties involved in the algorithm nor of the dimensions of the actual (H; A,B) problems it solves. Nor is there any information on whether the author did any experimental computations with the algorithm. Ye.Gabovich

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1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--COMPARATIVE EVALUATION OF RESULTS OF TREATMENT OF SYRINGOMYELIA
WITH X RAYS AND RADIOACTIVE IODINE -U-
AUTHOR--MIKULYAK, N.P. M
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNYE DELO, 1970, NR 3, PP 126-129
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SPINAL CORD, X RAY TECHNIQUE, IODINE ISOTOPE, MEDICAL NUCLEAR
APPLICATION, BONE MARROW, SERUM PROTEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0651 STEP NO--UP/0475/70/000/003/0125/0129
CIRC ACCESSION NO--AP0102637
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--A0102637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE COMPARED OF X RAY THERAPY OF 40 PATIENTS WITH SYRINGOMYELIA AND RADIOIODINE THERAPY OF THE SAME NUMBER OF PATIENTS. ANALYSING CHANGES OF SENSIBILITY, MOTOR AND VEGETO TROPHIC DISORDERS, THE MORPHOLOGY OF THE BONE MARROW AND BLOOD SERUM PROTEINS BEFORE AND FOLLOWING TREATMENT WITH EITHER OF THE TWO METHODS THE AUTHOR RECOMMENDS WIDER INTRODUCTION INTO PRACTICE OF THE RADIOACTIVE IODINE TREATMENT OF SYRINGOMYELIA.

UNCLASSIFIED

USSR

UDC: 8.74

YAMPOL'SKIY, S. A., MIKUSHOV, A. V., MIKHALEV, V. I.

"Realization of an Algorithm for Comparative Evaluation of the Activity of Institutions of Higher Education in Organizing Student Research Work"

Tomsk, Kibernetika i vuz--sbornik (Cybernetics and Higher Education--collection of works), vyp. 5, 1972, pp 133-145 (from RZh-Kibernetika, No 5, May 73, abstract No 5V812 by the authors)

Translation: The paper describes a procedure and program for processing data on the "MIR-1" computer on the results of competition exams of institutions of higher education with respect to the organization of student research work.

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USSR

UIC: 621.398.03

MIKITSKIY, G. V., IZRAILEV, R. A., and SKITAL'TSEV, V. S. [All-Union Scientific Research Institute of Electric Power]

"Device for Frequency-Division Multiplex"

USSR Author's Certificate No 291365, filed 24 Jul 69, published 24 Feb 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1971, Abstract No 12A242F)

Translation: A device is patented for frequency division multiplex of high-frequency communication channels for the transmission of telephone, telemetering, and automation signals from dispersed objects, by an energy system containing transmitters, receivers, and filters of telemetering and automation signals. The device differs in that, for the purpose of providing independence of the telephone, telemetering, and automation signals with a reduction in the amount of individual equipment of the channels, the transmitters are connected to the intermediate frequency strip of the communication equipment at a point between the output of the filter and the input of the second modulator, while the receivers are connected to a point between the output of the first modulator and the input of the i-f filter; the frequencies of the telemetering and automation channels are put in the i-f spectrum of the communications equipment in the interval between the extremes of the telephone communication channel bands.

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USSR

IL'INSKIY, A. S., MIKUYEVA, T. N.

"Diffraction by a Cylinder in a Flat Wave Guide"

Moscow, Vychislitel'nyye Metody i Programirovaniye XVI, 1971, pp 22-34

Abstract: A method of investigating diffraction problems by solving the Fredholm integral equations of the first type was developed previously [V. V. Kravtsov, Vychisl. metody i programirovaniye, vyp. V, Moscow State University, 1969]. This method was found to be applicable in studying a number of problems in the theory of hollow systems. Now, a method is described for numerical investigation of the diffraction problem in a wave guide using Fredholm integral equations of the first type. A study is made of the problem of the wave dispersion in a regular cylindrical wave guide in which there is a body D , bounded by a closed Lyapunov surface S_1 . The specific form of the Fredholm integral equation of the first type for the case of diffraction in a cylinder is analyzed.

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USSR

UDC: 629.7.06

MIL', M. L., KOZHEVNIKOV, V. A., TERLSHTEYN, D. M.

"Method of Control of a Helicopter"

USSR Authors' Certificate, No 253894, filed 4/07/67, published 12/03/70 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 3 A688 P)

Translation: A method is suggested for controlling a helicopter transporting an externally suspended cargo by acting on the lifting rotor, using the autopilot. In order to speed up damping of swinging of the cargo, a signal is formed which is proportional to the angular velocity of deflection of the line relative to the terrestrial vertical and, by feeding the signal produced to the autopilot, the helicopter is moved in space in the direction of deflection of the line from the terrestrial vertical.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MOLECULAR ORIENTATION IN AMORPHOUS POLYSTYRENE STUDIED BY MEANS OF
BIREFRINGENCE AND INFRARED SPECTROSCOPY -U-
AUTHOR--(03)-MILAGIN, M.E., GABARAYEVA, A.D., SHISHKIN, N.I.
COUNTRY OF INFO--USSR M
SOURCE--VYSOLOMOL SOEDIN., SER. A 1970, 12(13), 513-19
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYSTYRENE RESIN, AMORPHOUS POLYMER, IR SPECTROSCOPY, POLYMER
PHYSICAL PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1188 STEP NO--UR/0459/70/012/003/0513/0519
CIRC ACCESSION NO--AP0116653
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116653

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ORIENTATION FACTOR (F) OF AMORPHOUS POLYSTYRENE (I) (MOL. WT. 2 TIMES 10 PRIMES AND 7 TIMES 10 PRIMES) WAS EVALUATED BY BIREFRINGENCE (ΔN) AND IR DICHOISM. A PLOT OF ΔN VS. F_{SUBMAX} . GAVE ΔN EQUALS MINUS 0.66 F, WHICH, WHEN COMPARED WITH STEIN'S THEORY (R. S. STEIN, 1961), SUGGESTED THAT ANGLE BETWEEN A NORMAL TO THE BENZENE PLANE AND THE AXIS OF THE POLYMER SEGMENT WAS CONST. EQUAL TO 34DEGREES, REGARDLESS OF THE DEGREE OF ORIENTATION OR THE LENGTH OF THE ORIENTED CHAINS IN I. THE EVIDENCE ALSO SUGGESTED THAT α_{SUB1} - α_{SUB2} (I.E., THE DIFFERENCE BETWEEN LONGITUDINAL AND TRANSVERSE POLARIZABILITY OF A STATISTICAL SEGMENT) WAS ALSO A CONST. AT ANY DEGREE OF DRAWING. FACILITY: FIZ. TECH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 619:616.988.23:616.831.8-07:636.4

PRITULIN, P. I., Professor, PASHOV, T. V., Doctor of Veterinary Sciences, NASTENKO, V. D., Candidate of Veterinary Sciences, and NIIANKO, A. Ya., Candidate of Biological Sciences, All Union Institute of Experimental Veterinary Medicine, and Poltava Zone Scientific Research Veterinary Station

"Respiratory Form of Aujeszky's Disease in Hogs"

Moscow, Veterinariya, No 8, Aug 70, pp 55-56

Abstract: Respiratory diseases are common among hogs; on some farms, they represent 90-90% of all swine diseases. To identify the pathogen of enzootic pneumonia, cultures inoculated with lung tissues from diseased hogs were cultured and a very active cytopathogenic virus was isolated. Rabbits, guinea pigs, and white mice infected with this virus, which was free of bacterial contamination, died within a short period. Hogs infected with the virus developed a chronic type of pneumonia which was defined as the respiratory form of Aujeszky's disease. The virus was neutralized in vitro with specific serum. Passive immunization with the serum had no prophylactic effect in rabbits, but protected guinea pigs from Aujeszky's disease after infection with the cultured virus. It is recommended that the respiratory form of Aujeszky's disease be taken into consideration in the differential diagnosis of enzootic viral pneumonias.

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USSR

UDC: 621.318.58

SKRITSKIY, L. G., BUDYANOV, V. P., KALMAKOV, A. A., KRIVONOSOV, A. I.,
MILANOVICH, V. A., SHEVELEV, V. Ya., Moscow Construction Engineering Insti-
tute imeni V. V. Kuybyshev

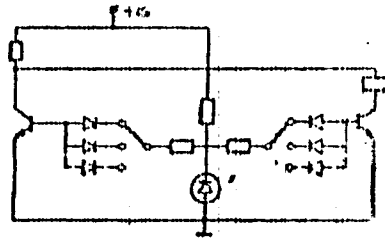
"A Photo Relay"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 16, Jun 71, Author's Certificate No 303672, Division H, filed 18 Jun 69,
published 13 May 71, pp 189-190

Translation: This Author's Certificate introduces a photo relay which con-
tains interconnected photoreceiver, two groups of stabilitrons with different
stabilization voltages and two transistors. Connected in the collector
circuit of the first of the transistors is the winding of an electromagnetic
actuating relay. As a distinguishing feature of the patent, tuning is fa-
cilitated and the accuracy with which the electromagnetic relay operates as
a function of the light flux is increased by connecting the cathodes of all
stabilitrons through switches to the centertap of a photoresistive voltage
divider, connecting the anodes of stabilitrons with lower stabilization
voltage to the base of the first transistor, and connecting the anodes of
stabilitrons with higher stabilization voltage to the base of the second
transistor. The collector-emitter junction of this transistor shunts the
winding of the electromagnetic relay.

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BRITISH, L. U., USSR AUTHOR'S CERTIFICATE NO. 203003-9



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USSR

USC 620.179.1

YAROSLAVTSEV, O. I., MIAREV, L. D., PYATIGORSKIY, B. N., YURKIN, V. V., and
GORLOV, V. M., Scientific Research Institute of Introscopy

"Standard Functional Units for a Block System for Nondestructive Testing"

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 138-144

Abstract: The first series of standardized functional units for block systems for nondestructive testing were developed and passed government tests at the Scientific Research Institute of Introscopy. The units were designed for completing apparatus of electromagnetic nondestructive quality control of products of the metallurgical and machine building industries and can be used in other apparatus. They were designed with all the requirements of block systems of nondestructive testing in mind and are built on semiconductor elements. Seven illustrations, and one table.

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USSR

UDC 621.373.544(088.8)

MILASH, V. G., NEPLYUYEV, L. N.

"A Two-Frequency Radio Impulse Flip-Flop"

USSR Author's Certificate No 258378, Filed 28 Mar 68, Published 24 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G192 P)

Translation: This Author's Certificate introduces a two-frequency radio impulse flip-flop which contains two tank circuits with supercritical coupling between these tank circuits and a tunnel diode. To stabilize the oscillation frequency of the flip-flop and improve operational reliability, the tunnel diode is connected between the tank circuits as a coupling element.

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USSR

UDC 632.954 + 668.7:633.11

SILANT'YEV, A. N., and MILASHCHENKO, N. Z., Siberian Scientific Research
Institute of Agriculture

"Aftereffects of the Herbicides -- Derivatives of Benzoic Acid -- on Spring
Wheat Under Conditions Prevailing in Western Siberia"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 46-48

Abstract: It has been shown that the decomposition of 2,3,6-TB and Banwel-D
in argillaceous chernozem soil in Western Siberia is very slow due to the
limited moisture content of the soil. Under these conditions Banwel-D is
deactivated about 3-4 times faster than 2,3,6-TB. Using optimal doses of
Banwel-D (0.95-1.35 kg/hectare) on corn fields produces no undesirable
aftereffects of this herbicide on spring wheat.

1/1

USSR

ZAPEVALOV, P. P., ~~MILASHCHENKO, N. Z.~~, PADZINOVSKIY, I. P., GORTLEVSKIY, A. A.,
MARINCHENKO, M. Z., YAKOVLEVA, L. I., YEMEL'YANOV, I. M.

"Results of Field Testing of Various Emulsions and Forms of 2, 4-D Butylester"

Nauch. Tr. Omsk. S-Kh. In-t. [Scientific Works of Omsk Agricultural Institute],
No 84, 1971, pp 129-131. (Translated from Referativnyy Zhurnal Khimiya, No 4,
Moscow, 1972, Abstract No 4N693 by T. A. Belyayeva).

Translation: In 1969, experiments were performed to compare the technical effectiveness of various 2, 4-D emulsions under field conditions when sprayed from the air (dose 0.4 kg/ha). Products used were: 1. 2,4-D -- technical preparate +1% OP-10 emulsifier; preparation of the emulsion was by spraying the preparate into water; 2. 2,4-D -- technical preparate +3% OP-10, spraying method; 3. 2,4-D -- "A" form (60% 2,4-D butylester, 20% OP-7, 20% diesel fuel); 4. 2,4-D type "B" (60, 10 and 30 % respectively); 5. 2, 4-D -- "C" form (60, 5 and 35 % respectively); 6. 2,4-D -- technical preparate. The effects of the herbicide were evaluated on the basis of the quantity and weight of perennial weed shoots and the wheat harvest. Versions 1 and 2 give the best results.

1/1

USSR

UDC 632.954:633.15

MILASHCHENKO, N. Z., SILANT'YEV, A. N., Siberian Scientific Research Institute of Agriculture

"On the application of Herbicide Mixtures to Corn Seedlings"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 10 (84), Oct 70, pp 49- 51

Abstract: The authors studied the effectiveness of herbicidal mixtures with various ratios of components on corn plantings in 1967-1968. Sukovinskiy-3 hybrid corn was sprayed with herbicides after development of 3-5 leaves. The mixtures contained a constant 0.6 kg/hectare of 2,4-DA and M-4Cl, while the quantity of 2,3,6-TB and Banvel-D was varied from 0.95 to 0.12 kg/hectare. It was found that mixtures of Banvel-D and 2,4-D or 2M-4Cl have a number of advantages over the compounds applied separately. The mixtures are effective regardless of weather conditions, have a fairly strong residual effect on weed sprouts which appear after summer rains, are safe for the next rotational crop (wheat), and assure a higher corn silage harvest. In mixtures designed for treating corn plantings, the concentration of Banvel-D should be higher than for treatment of other cereal grasses. The optimum amount for a mixture with 0.6 kg/hectare of 2,4-DA or 2M-4Cl is 0.24-0.34 kg/hectare. 1/1

- 40 -

USSR

M UDC 632.954:633.2

KHOLMOV, V. G., and MILASECHENKO, N. Z., Siberian Scientific Research Institute of Agriculture

"Effect of Herbicides on the Chemical Composition and Nutritional Value of Meadow Grasses"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 3, No 7, Jul 70, pp 37-39

Abstract: Studies were conducted of the effect of herbicides on the chemical composition and nutritional value of meadow grasses. The grasses were represented by *Poa pratensis* L., *Agropirum repens* L., *Vicia cracca* L., *Trifolium pratense* L., *Helicoharis eupalustris* Lindb., *Taraxacum officinale* Wigg., *Tilipendula ulmaria* L., and the poisonous and harmful *Ranunculus*, *Pteranica vulgaris* Blkw. ex. DC., *Equisetum arvense* L. Samples for analysis were taken in the following experimental variants: 1 -- control (natural meadow without treatment); 2 -- $N_{60}P_{60}$; 3 -- 2M-4KHM, 2 kgm/ha; 4 -- 2M-4KHP, 2 kgm/ha; 5 -- 2,4-DA, 1.2 kgm/ha; and in variants with use of the herbicides with preceding $N_{60}P_{60}$ application, both in one-time administration and in treatment over 2-3 seasons.

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USSR

KHOLMOV, V. G., et al., Moscow, Khimiya v Sel'skoye Khozyaystve.
Vol 8, No 7, Jul 70, pp 37-39

From results of the investigations, it was established that treatment of meadows with herbicides is positively reflected not only in feed quality but also in its nutritive value which is associated with the regrouping of botanical types of grasses. In one-time application of the herbicides, the content of feed units and digestible protein in one kgm of fodder materially increased in comparison with the control. In addition, the ratio of calcium and phosphorus in hay improved. Better results were obtained in application of 2M-4KhM in a dose of 2 kgm/ha with preceding fertilization. Lowering of calcium content in the fodder after use of 2,4-D and 2M-4KhP is explained by decrease in the herbage of some varieties from the mixed grass group which were characterized by high content of the given element. Phosphorus content in these variants was at the level of the control. It was concluded that herbicides from the phenoxy acid group change the nutritional substance content in meadow grasses of individual varieties and of agricultural-botanical groups. However, in connection with the regrouping of varieties caused by the herbicides, the quality and nutritive value of hay on 2/3

USSR

KHOLMOV, V. G., et al., Moscow, Khimiya v Sel'skoye Khozyaystve,
Vol 8, No 7, Jul 70, pp 37-39

the whole do not worsen and in a number of cases even improve as a
result of increase in the amount of digestible protein in the
fodder and change of calcium and phosphorus ratio in it (the latter
approaching the norm).

3/3

MILASHENKO, Yu.P.

SPRS 59208
L-73

14-4. STUDY OF GERMANIUM EXTRACT FROM A MOLECULAR BEAM IN A VACUUM THROUGH THE LIQUID PHASE

Article by G. I. Palkovskiy, Yu. P. Milashenko, A. N. Kalpakov, Yu. D. Chistyakov, A. M. Zhuravskiy, in Journal of Applied Physics, No. 1, 1972, p. 119.

A study was made of germanium extract from a molecular beam in a vacuum through the liquid phase. The study was carried out in a vacuum chamber with a tungsten filament, silicon, gallium, antimony on the surface of various substrates [germanium, silicon or gallium arsenide]. The best results were obtained for the case of germanium condensation through the alloy layer [germanium] on the surface of the monocrystalline germanium substrate. This is explained by the best wetting conditions. The deposition of the metal creating the liquid phase was carried out at a substrate temperature of 70-100 degrees, subsequent pickling of the metal at a temperature of 300-500 degrees, and deposition of germanium through the liquid phase layer, at 200-300 degrees. The x-ray diffraction method of Kozel was used to estimate the variation of the crystal lattice parameter of the autoepitaxial layer of germanium on saturation of it with tin (0.87 atomic percent). The possibility of creating structures using the given process is demonstrated. The well-known characteristics of the microdozes 0.1um in diameter (the n-type layer, the p-type substrate) are shown to be characteristic of the alloy-phase film and diffraction patterns are contact diodes. The results obtained indicate the prospectiveness of the given method of epitaxy for the creation of homojunctions and heterojunctions based on semiconductors.

USSR

UDC 523.514

NEVEROV, L. A., KORTEV, N. V., IARIONOVA, T. A., MITROPANOV, V. V.,
MILASHEVSKIY, A. K., POPOV, YU. V., Candidate of Sciences,
RYZHENKO, B. V.

"The New KDG-3 Phototachymeter With Semiconductor Emission Source"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70,
pp 35-39

Abstract: The authors describe the operating principle, optical system, construction and test results of the first serially produced phase phototachymeter with gallium arsenide diode as the emission source. The instrument can be used to measure distances of up to 2 km with an error of no more than 15 mm over its entire range. Measurement time is 10-15 minutes. The instrument is equipped with thermostatic control and can be used at temperatures from -50 to 450°C. Power consumption is no more than 5 watts.

009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SEISMIC DATA ON STRUCTURE OF SEDIMENTS IN TATAR STRAIT, SEISMIC
DATA ON STRUCTURE OF THE SEDIMENTARY LAYER IN THE SOUTHERN PART OF THE
AUTHOR--(05)--MILASHIN, A.P., SIPLATOV, V.A., YUNOV, A.YU., VOLKOV, A.P.,
TABDYAKOV, A.YA.
COUNTRY OF INFO--USSR

M

SOURCE--GELENDSHIK; MOSCOW, GEOTEKTONIKA, NO 1, 1970, PP 117-120

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TECTONICS, SEISMIC SURVEY, SEDIMENTARY ROCK LAYER, MARINE
GEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0052

STEP NO--UR/9066/70/000/001/0117/0120

CIRC ACCESSION NO--AP0108425

UNCLASSIFIED

2/3 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108425

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECTONICALLY, THE REGION OF TATAR STRAIT, BEING A CONTINUATION OF THE DEEP WATER SEA OF JAPAN BASIN, IS SITUATED IN THE TRANSITION ZONE FROM THE ASIATIC CONTINENT TO THE PACIFIC OCEAN. DURING THE SUMMER AND AUTUMN OF 1966 THE DIVISION OF MARINE GEOPHYSICAL WORK OF THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GEOPHYSICS FOR THE FIRST TIME CARRIED OUT MARINE SEISMIC STUDIES IN THE TATAR STRAIT BY THE METHOD OF CONTINUOUS PROFILING BY THE REFLECTED WAVES METHOD. MOST OF THE WORK WAS DONE ON THE SAKHALIN ISLAND SHELF IN THE SECTOR BETWEEN CAPE LAMON AND THE SOUTHEASTERN SHORES OF DELANGL' GULF. WITHIN THIS AREA THREE SEISMIC PROFILES INTERSECT TATAR STRAIT FROM SAKHALIN TO THE ASIATIC CONTINENT IN A LATITUDINAL DIRECTION (FIG. 1 IS A MAP OF THE WORK AREA.) THE COLLECTED DATA INDICATE THAT THE STRUCTURE OF THE UPPER PART OF THE SEDIMENTARY COMPLEX IS CHARACTERIZED FOR THE MOST PART BY TWO GROUPS OF DEPOSITS. TH AREA CAN BE DIVIDED INTO EASTERN AND WESTERN PARTS ON THE BASIS OF THE SEISMIC DATA. THE EASTERN PART, CORRESPONDING IN GEOMORPHOLOGICAL RESPECTS TO THE SHELF NEAR SAKHALIN, IS CHARACTERIZED BY WELL EXPRESSED DISLOCATION OF THE DEPOSITS. THE DURATION OF THE SEISMIC RECORD HERE VARIES FROM 1.4-2.0 SEC, LESS FREQUENTLY 2.5 SEC, IN SYNCLINAL DOWNWARDS TO 0.7-0.9 SEC AND COMPLETE DISAPPEARANCE IN ANTICLINES. THE WESTERN PART CORRESPONDS TO THE ABYSSAL SECTOR AND THE EASTERN SLOPE OF THE STRAIT. THE SEISMIC RECORD IS CHARACTERIZED BY A GREAT DURATION, UP TO 3.0-3.5 SEC. THE STRUCTURE OF THIS REGION IS DESCRIBED IN DETAIL.

UNCLASSIFIED

3/3 009

UNCLASSIFIED

PROCESSING DATE--13NOV79

CIRC ACCESSION NO--AP0108425

ABSTRACT/EXTRACT--THE LAMANON-TOMARINSKAYA FOLDED ZONE, DETECTED BY THE REFLECTED WAVES METHOD, IS SITUATED WITHIN THE SAKHALIN-HOKKAIDO CENOZOIC FOLDED REGION, IN THIS SECTOR COINCIDING WITH THE SHELF SURROUNDING SAKHALIN. THE FOREDEEP OF THE TATAR STRAIT IS SITUATED TO THE WEST; IT IS GENETICALLY RELATED TO THE PRESENT DAY ABYSSAL DEPRESSION OF THE SEA OF JAPAN. THE WESTERN MARGIN OF THIS DOWNWARP IS PARTIALLY SUPERPOSED ON STRUCTURES OF THE SIKHOTE-ALIN' AND THE EASTERN SIKHOTE-ALIN' VOLCANIC ZONE. THE NEW FOLDED ZONE DETECTED ON THE SAKHALIN SHELF IN THE SAKHALIN PETROLEUM AND GAS ACCUMULATION. ALL THE DETECTED UPLIFTS ARE FOUND AT SEA DEPTHS UP TO 100 M AND MOST OF THE FOLDS ARE ACCESSIBLE FOR MARINE DRILLING. THE FOREDEEP OF TATAR STRAIT MUST BE REGARDED AS A MAJOR REGION OF PETROLEUM AND GAS FORMATION.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE SEISMIC STUDIES IN THE GREENLAND SEA -U-
AUTHOR-(02)-KOGAN, L.I., MILASHIN, A.P. *M*
COUNTRY OF INFO--USSR, GREENLAND
SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 470-473
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--SEISMIC PROFILE, CONTINENTAL SLOPE, SEDIMENT, GEOLOGIC
FORMATION, OCEAN BOTTOM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1856 STEP NO--UR/0213/70/010/003/0470/0473
CIRC ACCESSION NO--AP0129216
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--15NOV70

CIRC ACCESSION NO--AP0129216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEISMIC PROFILING MADE IN THE GREENLAND SEA WEST OF SPITSBERGEN HAS REVEALED DIFFERENT GEOLOGICAL STRUCTURES WITHIN DIFFERENT GEOLOGICAL PROVINCES OF THE BASIN. THE SEISMIC PROFILE CROSSED THE SHELF, CONTINENTAL SLOPE AND MID OCEANIC RIDGE. WEST OF SPITSBERGEN, WITHIN THE SHELF AND CONTINENTAL SLOPE, A TROUGH WAS DISCOVERED WITH ABOUT 2.5 KM THICK SEDIMENTARY COVER IN ITS CENTRAL PART. THE THICKNESS OF SEDIMENTS IN THE MID ATLANTIC RIDGE AREA RANGES FROM 0 TO 1000 M, LAYERING IS HORIZONTAL OR SLIGHTLY SLOPING. THE SEDIMENTARY COVER WITHIN THE ABYSSAL PLAIN ABOUT 1000 M THICK CAN BE DIVIDED INTO TWO PARTS. THE UPPER PART 300 TO 350 M THICK HAS WELL PRONOUNCED HORIZONTAL LAYERS CORRESPONDING APPARENTLY TO LOOSE OR WEAKLY CONSOLIDATED SEDIMENTS. FACILITY: VSESLOYZENYY NAUCHNO ISSLED. INSTITUT MORSKOY GEOLOGII, GELENDZHIK.

UNCLASSIFIED

Heat, Combustion, Detonation

USSR

UDC 621.039.587

BOGATYREVA, S. V., LEBEDEV, Yu. Ye., MILAYEV, A. I., TEVLIN, S. A.

"Study of the Possibility of Applying Complexons in Cooling Channels in the Presence of Radiation"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, No. 126, pp 24-27 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.36)

Translation: Solutions of compositions based on complexons can be used to wash cooling channels if the radiation doses are not too high. Active deposits are partially washed off. The presence of radiation accelerates processes within the coolant that determine the development of a protective film on pearlite steels. This makes it possible to shorten the time for treating the channels as compared with the time expended under ordinary methods. 1 ill., 2 ref.

1/1

Physical Properties

USSR

UDC: 669.01.018.5:669.784:519.21

DEMENT'YEVA, G.P., LIVSHITS, B.G., LIVSHITS, L.B., and MILAYEV, I.M., Moscow
Institute of Steel and Alloys

"Magnetic Properties of Cast Hard-Magnetic Alloys in the System Manganese --
Aluminum -- Carbon"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970,
pp 120-122

Abstract: Studies were made to determine the technological possibilities and prospects of Mn -- Al -- C cast alloys as permanent-magnet materials to compete with alloys containing nickel and cobalt. In the experiments, the alloy (chemical analysis: 71.3% Mn, 28.2% Al, 0.99% C) was melted in a 5-kg induction furnace in an argon atmosphere (in an aluminum crucible) and poured into 13-15-mm-diameter quartz tubes 150-180 mm in length. Brand 380 manganese, brand AV00 aluminum, and carbon in the form of graphite were used for the melt. All specimens were homogenized at a temperature of 1100°C for one hour. According to the curves of magnetic property changes after normalization from 1100°C and tempering, it was determined that the maximal magnetic properties are obtained after a 15-minute holding time at a tempering temperature of 650°C. Carbon, in addition to improving the magnetic properties, increases the hardness and brittleness of Mn -- Al alloys and promotes directional crystallization. On the basis of the results obtained, it was postu-

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USSR

DEMENT'YEVA, G.P., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 120-122

lated that the cast Mn -- Al -- C alloy could replace certain Fe -- Ni -- Al cast alloys containing up to 30% Ni. However, additional measures will be required to lower the susceptibility of the Mn -- Al -- C alloy to crack formation in heat treatment.

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USSR

UDC: 681.2.088:519.92

MINAYEV, Yu. N.

"Engineering Evaluation of the Information Capacity of Measuring Devices with Arbitrary Ratio of Additive and Multiplicative Components of Error"

Moscow, Metrologiya, No 1, 1973, pp 8-12.

Abstract: The establishment of the quantity of information transformed by a measuring device with an arbitrary ratio of additive and multiplicative components of error is a general problem, the solution of which is of general interest. This article demonstrates that arbitrary entropy of error can be defined as half the sum of the arbitrary entropies of the limiting additive errors calculated at the boundaries of the range of change of the input signal. A formula is produced for determination of the quantity of information in the case when the probability distribution density of the input signal changes according to a hyperbolic rule, while the error contains both additive and multiplicative components.

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MIL'CHENKO, N.

(Maj. Gen.)

Mil

PROBABLE TIME AND COMBAT READINESS
of Maj Gen Arty N. Mil'chenko

The data given concerning detected a great deal of attention to questions of military building and raising the combat readiness of the Soviet Army Forces. "Firstly, it is necessary to be guided by the people," said Comrade Mil'chenko in the Official Report of the State Central Committee. "The main task of the Soviet Army Forces is to ensure the security of the country and the defense of its borders by every means should remain one of the most important tasks of the party and people."

In carrying out this very important mission, a special part is assigned to the country's air forces. They are designated to repulse any sudden air attack by an aggressor and ensure the continuous operation of our national economy, transport of state administrations, and the combat capability of our Armed Forces during military operations.

In our day, V. I. Lenin's warning that the bourgeoisie capitalist always is essentially timid in the moment of a real trial of willings and constant combat readiness for the air forces of the country has grown increasingly more modern conditions. This is a result of the imperialist and colonial wars and the great changes which have taken place in the development of means of air attack.

In their plans for unleashing a future war, the imperialists place their main hope in the element of surprise in attacking. Numerous strikes have often led to the defeat of the aggressor in the past as well as to the nuclear weapons, can have a greater effect on the course

USSR

UDC 681.525.65:525

MILEKHIN, V. M.

"Trigger with Counting Input"

USSR Author's Certificate No 299839, Filed 7/01/69, Published 26/04/71,
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychis-
litel'naya Tekhnika, No 11, 1971, Abstract No 11 A77 F).

Translation: The author suggests a trigger, differing in that in order to
simplify the design, two 2-membrane relays with two pairs of nozzles of
different diameters are used, between which are valves connected to the
rigid center of the membrane unit. The nozzle of smaller diameter in the
first relay is connected to the input channel; in the second relay, to
the supply channel; while the larger-diameter nozzles of both relays are
connected to the atmosphere. The supply chambers of the relays are con-
nected to the mutually inverted output channels and to the input chambers
of the relays. 1 Figure.

1/1

Exobiology

USSR

UDC 576.807:523

FEDOROVA, R. I., MILEKHINA, Ye. I., and IL'YUKHINA, N. I., Institute of Space Studies, Academy of Sciences, USSR, Moscow

"On the Possibilities of the "Gas Exchange" Method for the Detection of Extraterrestrial Life -- Identification of Nitrogen Fixing Microorganisms"

Moscow, Izvestiya Akademii Nauk SSSR, Sviya Biologicheskaya, No 6, Nov/Dec 73, pp 797-805

Abstract: The possibility of the identification of nitrogen fixing microorganisms has been investigated in an experiment on Mars, by the reduction of $C_2H_2 \rightarrow C_2H_4$ with concurrent analysis of concurrent changes in the gaseous phase. The inhibiting effect of C_2H_2 has been identified, manifested by the retardation of the multiplication of anaerobic nitrogen fixators and in time laps of the appearance of H_2 and C_2H_2 . The degree of inhibition depends on the type of soil and on the titre of nitrogen fixators. It has been established that C_2H_2 (0.015; 0.12 atm) inhibits the reduction of N_2O by the denitrificating microorganisms. It is proposed to determine the denitrification ability of soils by means of the blocking activity of acetylene of the

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USSR

FEDOROVA, R. I., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 73, pp 797-805

reduction stage of N_2O N_2 . In the planning stage of the exobiologic studies this makes it possible to identify in one text two physiological groups of microorganisms, improving the reliability of the experiment, i.e. it makes it possible to control the change in the denitrification process by several gas components: H_2 , N_2O , C_2H_2 , N_2 .

2/2

USSR

UDC: 537.5 1

KAGAN, Yu. M., MILENIN, V. M., and MURADOV, A. K.

"Investigating the Parameters of the Plasma of a Modulated Discharge in Helium"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 9, 1973, pp 2003-2004

Abstract: This brief communication describes experiments performed to investigate phenomena occurring when the current in a discharge in helium is modulated by frequencies in the range between a lower limit, at which frequency the electrons pass to the walls as a result of ambipolar diffusion, and an upper limit which is the frequency of formation of the electron distribution function according to energy. The apparatus for the experiments consisted of a cylindrical discharge tube with a heated cathode, the tube being 700 mm long with an inner diameter of 28 mm. On the tube axis at distances of 60 and 135 mm from the anode are two probes set at right angles to the axis. A block diagram of the tube and the rest of the equipment is given. Curves are plotted for the longitudinal electric field intensity as a function of the frequency, the electron distribution function according to energy, and the computed and experimentally measured electron distribution functions plotted
1/2

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USSR

UDC: 537.5 1

KAGAN, Yu. M., et al, Zhurnal tekhnicheskoy fiziki, No 9, 1973,
pp 2003-2004

on the same graph for the sake of comparison. Good agreement between the two is evident. The authors thank N. B. Kolokolov and A. Blagoyev for their advice, and V. Pulit for his assistance in processing the results.

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USSR

UDC: 537.521 ¹

KAGAN, Yu. M., KOLCKOLOV, N. B., LYAGUSHCHENKO, R. I., MILENIN, V. M., and MIRZABEKOV, A. M.

"Investigating the Electron Distribution Function in Hg+Ar and Hg+Kr Mixtures"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 4, April 1971, pp 714-719

Abstract: The measurements made in this article were of the energy distribution of electrons in the positive column of discharges in gases mixing mercury vapor and inert argon and krypton. Such measurements are of practical interest. Because difficulties arise as the result of intense noise, in making these measurements the authors used a tracking probe through which the effect of the space potential variations on the measurement of the distribution function can be eliminated. The measurements were made in a tube measuring 35 mm in diameter with an incandescent cathode. Curves of the distribution are plotted. A comparison

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KAGAN, et al, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 4, April 1971, pp 714-719

was also made of the experimental distribution functions and the functions calculated from the kinetic equation. The estimates made indicate that elastic collisions of electrons and the mercury atoms are negligible compared to the elastic collisions with the inert gas atoms. The authors are associated with the Leningrad State University, imeni A. A. Zhdanov.

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USSR

UDC 537.525

KAGAN, Yu. M., KOKOLOV, N. D., and MILENIN, V. M.

"Electrical and Optical Measurements in Traveling Strata in Neon. II"

Leningrad, Optika i Spektroskopiya, Vol 30, No 2, 1971, pp 209-210

Abstract: The absolute intensities of the 5852, 6074, 5945, 6678, and 6096 Å lines were measured for the $3p^1S_0$, $3p^3P_2$ levels of neon along traveling strata, allowing the number of excitations and number of radiated quanta to be compared for these levels. The measurements indicated that ordinary spectroscopic measurements yield values for line intensities which are equal to the averages and for concentrations of excited atoms which are in many cases near the averages.

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USSR

UDC 537.525 : 546.292

KAGAN, YU. M., KOLOKOLOV, N. B., and MILENIN, V. M.

"Electrical and Optical Measurements in Moving Striations in Neon. I"

Leningrad, Optika i Spektroskopiya, Vol 29, No 6, Dec 70, pp 1041-1044

Abstract: The article describes results of a study of the electrical and optical parameters of moving striations in neon. Such studies permit quantitative elucidation of the pattern of excitation and ionization in moving striations with allowance for the specific character of the electron distribution. An earlier article by the authors described a method making it possible to measure the energy distribution of electrons in moving striations. The present article uses this method to measure the energy distribution of electrons in different phases of moving striations in a neon discharge in a tube with a 2.5-cm radius at a pressure of 0.75 torr and discharge currents of 120 and 200 ma, with the strata length 17 and 18 cm respectively.

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Magnetohydrodynamics



USSR

UDC 533.935

KAGAN, YU. M., KOLOKOLOV, N. B., MILENIN, V. M., MIRZABEKOV,
A. M., Leningrad State University

"Measurement of the Energy Distribution of Electrons in a Plasma
in the Presence of Noise"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5, June 1970,
pp 1319-1321

Abstract: Serious difficulties caused by fluctuations in the discharge for plasma diagnostics generally and probe diagnostics in particular are examined. It is noted that the sensitivity and, in certain cases, the applicability of the probe method are considerably limited by the intensity of discharge noises. The effect of noises on a technique using modulation of the probe current to study electron distribution is said to be a masking of the signal of the second derivative on the one hand and a distortion of the shape of the distribution itself of the other, due to oscillations in the potential of the space where the probe
1/3

USSR

KAGAN, YU. M., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5, June 1970, pp 1319-1321

is located. The "tracking" probe method is proposed for measuring the energy distribution of electrons in the presence of noise. The authors showed earlier that to obtain the real averaged distribution in the presence of periodic plasma fluctuations the variable component of the potential of the measuring probe must "track" the space potentials. The following principle was used for measurements in a plasma in the presence of oscillations: a reference probe at the potential of the floating probe was placed close to the measuring probe. The change in the floating potential of this probe caused by oscillations of the plasma is transmitted to the circuit of the measuring probe. In the experiments described, an emitter follower with the following characteristics was used: input resistance 1 MW, output resistance 5 Ω , transmission band 30-600,000 Hz. The SK-4-3 spectral analyzer was used to analyze the spectrum and the amplitude of the noises. The energy distribution of electrons in a mercury-argon mixture at a mercury vapor pressure of $2.5 \cdot 10^{-3}$ torr and an argon pressure of 0.6 torr was measured for a discharge current of 100 ma. The spectrum of oscillations between

USSR

KAGAN, YU. M., et al, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 5,
June 1970, pp 1319-1321

the measuring probe and the ground before and after inclusion of the emitter follower is given. It was shown that the application of the tracking probe method makes it possible to measure the distribution function in a plasma in the presence of noises when the use of the ordinary method leads to erroneous results.

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USSR

UDC 659.017:539.16.04

ABRAMOV, O. V., DMITRIYEV, N. N., KUDEL'KIN, V. P., LAKTIONOV, V. S., and
MILENIN, Ye. N., Moscow

"Ultrasonic Treatment of High-Heat-Resistance Nickel Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 67-72

Abstract: The steels K20N30, E1437B, EP109, and EP220 were ultrasonically treated in the process of vacuum arc remelting, in order to improve their qualities by size reduction of macro-and micro-grains and removal of the zone of acicular crystals. The change of the ingot structure resulted in a considerable increase of plasticity properties of the cast material in the interval of hot deformation temperatures. The surface of bars obtained from ultrasonically treated ingots shows a considerably higher quality than the surface of bars from control ingots. The impact toughness of the rolled iron, obtained from ultrasonically treated alloys EP109 and EP220, increased in the interval of deformation temperatures by approximately two times in comparison with control ingots. Three figures, one table, four bibliographic references.

1/1

USSR

UDC 669.245.018.44(088.8)

13

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

"Nickel-Chromium Base Alloy"

USSR Author's Certificate No 276418, Filed 2 Jun 69, Published 16 Oct 70 (from RZh-Metallurziya, 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, Ca 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/mm², δ 65%, σ stress-rupture 1 kg/mm², 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/m². It is corrosion-resistant in a moist atmosphere under tropical conditions, in sea water, and in the products of combustion of highly sulfurous fuel.

1/1

1/2 026

TITLE—HYGIENIC EDUCATION AS A METHOD FOR PREVENTION OF HELMINTHIC DISEASES AND EXPERIENCE OF ITS ORGANIZATION IN PRESCHOOL ORPHANAGES -U-
AUTHOR—MILENINA, YE.V.

UNCLASSIFIED

PROCESSING DATE--13NOV70

COUNTRY OF INFO--USSR

M

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENI, 1970, VOL 39, NR 2, PP 190-194
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--HEALTH EDUCATION, HYGIENE, PARASITIC DISEASE, TROPIC MEDICINE, GASTROINTESTINAL SYSTEM, WORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1364

STEP NO--UR/C358/70/039/002/0190/0194

CIRC ACCESSION NO--AP0109444

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109444

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF HYGIENIC EDUCATION OF CHILDREN IN PRE SCHOOL CHILDREN'S INSTITUTIONS REVEALED INADEQUATE TRAINING OF TEACHERS AND LACK OF LITERATURE ON THIS PROBLEM, INSUFFICIENT KNOWLEDGE OF METHODS OF HYGIENIC EDUCATION BY PHYSICIANS AND MEDICAL NURSES. EXPERIENCE OF ORGANIZATION OF HYGIENIC EDUCATION OF CHILDREN IN CHILDREN'S INSTITUTIONS DEMONSTRATED THAT PROPER EDUCATION WHICH IS A RELIABLE METHOD OF CONTROL AND PREVENTION OF HELMINTHIC DISEASES RESULTS ALSO IN A MARKED AND STABLE REDUCTION IN THE INCIDENCE OR STABLE ERADICATION OF HYMENOLEPIDOSIS AND ENTEROBIOSIS. HYGIENIC EDUCATION MUST BE PERFORMED WITH DUE CONSIDERATION OF THE AGE AND CONTINGENT OF CHILDREN. REALIZATION OF HYGIENIC MEASURES MUST BE BASED ON CONSTANCY, GRADUALNESS AND SEQUENCE OF TEACHING OF ELEMENTS OF HYGIENIC PROCEDURES AND CONFIRMATION OF THE HABITS WHICH FOLLOWS FROM CONDITIONAL REFLEX NATURE OF FORMATION OF THE LATTER. MASTERING OF HYGIENIC HABITS BY 90-95PERCENT OF CHILDREN AND LOW INCIDENCE OF INFESTATION AND ATTACK RATES OF HELMINTHIC DISEASES SHOULD BE CONSIDERED AS A CRITERION OF SUCCESSFUL ORGANIZATION OF HYGIENIC EDUCATION. FACILITY: OTDEL MEDITSINSKOY GELMINTOLOGII INSTITUTA MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM. YE. I. MARTSINOVSKOGO, MOSCOW.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--A WAY TO IMPROVE THE DIAGNOSIS OF HYMENOLEPIDOSIS -U-
AUTHOR--(02)--BAYANDIAN, D.G., MILENINA, YE.V. *M*
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA PARAZITOLOGIIYA I PARAZITARNYYE BOLEZNI, 1970, VOL
39, NR 2, PP 239-240
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIAGNOSTIC METHODS, PEDIATRICS, PARASITIC DISEASE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0953 STEP NO--UR/0358/70/039/002/0239/0240
CIRC ACCESSION NO--AP0109110
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--0900170

2/2 020

CIRC ACCESSION NO--AP0109110

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHENASAL WAS USED FOR DIAGNOSTIC PURPOSE FOR DETECTION OF PATIENTS WITH HYMENOLEPIDOSIS IN CHILDREN'S COMMUNITIES IN THOSE INSTANCES WHEN EGGS OF H. NANA COULD NOT BE DETECTED IN SOME CHILDREN BY METHODS OF COPROLOGICAL DIAGNOSIS USING THREE REPEATED EXAMINATIONS. ON THE EVE OF THE FOURTH EXAMINATION, IN THE EVENING BEFORE SLEEP PHENASAL WAS GIVEN IN A DOSE OF 0.5-1.0 G TOGETHER WITH 0.1 G OF PURGEN; IN THE MORNING A FECAL SPECIMEN WAS COLLECTED FOR ANALYSIS. THE EFFECTIVENESS OF HYMENOLEPIDOSIS DIAGNOSIS AFTER USE OF PHENASAL INCREASED CONSIDERABLY. FACILITY: OTDEL MEDITSINSKOY GEL' MINTOLOGII INSTITUTA MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM. YE. I. MARTSINOVSKOGO MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

AA0044628

M

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243685 TRANSMISSION SET OF A PULSE CODING SYSTEM.

The distributor of the data units is connected to one input of the module testing these units. The other inputs of the module testing the data units are connected to the distributor of the data units' digits. The outputs of the data units are connected to the inputs of the coding module. One input of the switching module is connected to the line module and the other one to the module checking the code. The output of the switching module is connected to the line module.

16.2.68 as 1219005/18-24.D.D.ANDREYEV et al(8.10.69)
Bul 17/14.5.69. Class 21c, 74b. Int.Cl.G 05f,
G 08c.

AUTHORS: Andreyev, D. D.; Milenko, E. B.; Rudenko, V. N.;
Yurkov, V. A.; Gavrilyuk, V. M.

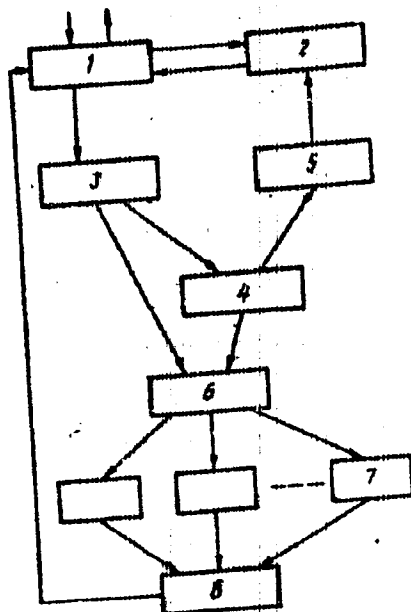
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Institut Avtomatiki

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19771314

AA0044628



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19771315

1/2 014
 TITLE--EFFECT OF FORCES ON THE GUIDE TOOL DURING TRANSVERSE SPIRAL ROLLING
 -U-
 AUTHOR--(03)-GOLUBCHIK, R.M., MILENNYY, K.F., BLOKHIN, V.V.
 COUNTRY OF INFO--USSR
 SOURCE--MOSCOW, DOKL. NAUCHNO-TEKHN, KONFERENTSIII PO ITOGAM
 REFERENCE--REFERATIVNYY ZHURNAL METALLURGIYA, NO 12, DEC 69, ABSTRACT NO
 DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--METAL ROLLING, ROLLING MILL, STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1992/1882

STEP NO--UR/0000/69/000.000/0027/0033

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 014
CIRC ACCESSION NO--AR0053028
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THIS ARTICLE CONTAINS A DISCUSSION OF A PROCEDURE FOR DETERMINING THE FORCES ON THE GUIDE TOOL WHEN REDUCING A CONTINUOUS ELASTIC BILLET. A DISC COMPRESSED BY TWO FORCES WITH RESPECT TO THE VERTICAL DIAMETER AND JAMMED BETWEEN TWO ABSOLUTELY RIGID SUPPORTS WITH RESPECT TO HORIZONTAL DIAMETER IS INVESTIGATED. A SCHEME IS PRESENTED FOR DETERMINING THE REACTIVE FORCES UNDER THE EFFECT OF TWO CONCENTRATED FORCES ON THE DISC AND THE LOAD DISTRIBUTION AND PROCEDURE FOR CALCULATING THE STRESSES OCCURRING IN THE DISC. EXPERIMENTAL DATA ON THE METAL PRESSURE ON THE ROLLS WERE OBTAINED. THESE DATA WERE COMPARED WITH THE CALCULATED DATA.

UDC 621.771.35.001.15

USSR

GOLUBCHIK, R. M., POLUKHIN, P. I., MILENNYY, K. F., and BLOKHIN, V. V.

"Theoretical Questions of the Kinematics of the Process of Cross Rolling"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"
1970, pp 146-152

Translation: Metal forming during cross rolling is considered, formulas for the components of the power balance are derived, and an expression is obtained for calculating the efficiency in the roll barrels. Conditions of skidding and minimal efficiency are shown as a function of the parameters of the process. Five figures and seven bibliographic entries.

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UDC 621.771.35.001.15

USSR

POLUKHIN, P. I., GOLUBCHIK, R. M., MILENNYY, K. F., and SVESURNOV, Ya. A.

"Specific Normal Pressures and Specific Friction Forces During Cross Rolling on Multiroll Mills"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 278-281

Translation: On the basis of distribution curves for specific normal pressures and specific friction forces in the contact zone between lead test pieces and the roll, a comparison is made for the first time of the power conditions of rolling on two-, three-, and four-roll mills. The dependencies of average specific normal pressure and full metal pressure against the roll on reduction are obtained as a function of the number of working rolls. It is shown, from an analysis of the curves of specific friction forces, that adopting an average value of friction forces for the entire arc of contact instead of considering average values of specific friction forces in the zones of lag and advance decreases the amount of power on the roll. Five figures and ten bibliographic entries.

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- 34 -

USSR

UDC 621.771.35.001.5

POLUKHIN, P. I., GOLUBCHIK, R. M., MILENNYY, K. F., and BLOKHIN, V. V.

"Metal Slip During Cross Rolling in Mills With Various Numbers of Working Rolls"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 142-146

Translation: The article makes a comparison of the kinematic parameters of cross rolling with various numbers of working rolls. The effectiveness of the particular rolling diagrams for different unit reductions is determined from a consideration of the efficiency in the roll barrel using experimental data. Four figures and six bibliographic entries.

1/1

USSR

UDC 547.245+547.438.1'6

MILESHKEVICH, V. P., and KARLIN, A. V., All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Reaction of Hexamethyldisiloxane With Phosphoric and Boric Anhydrides"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2573-2577

Abstract: Some lack of information and discrepancies exist regarding the mechanism of formation and the yield of tris-(trimethylsilyl) phosphate (MSP), from the title reaction.

The authors found that the yield of MSP is not less than 25% in boiling hexamethyldisiloxane with phosphoric anhydride in the absence of a catalyst with use of forced distillation, 52% of pyrometaphosphates will be obtained (not previously mentioned in the literature). It was also found that bis(trimethylsilyl) sulfate acts as a catalyst in this reaction.

1/1

- 33 -

EQUIPMENT
Gyroscopic

USSR

DOC: none

MILEVA, V. S. (Sofia)

"An Optimal Problem of Gyroscope Guidance of an Artificial Satellite"

Moscow, Prikladnaya Matematika i Mekhanika, Vol. 34, No. 2, 1970, pp 233-240

Abstract: Using two sets of coordinates, one fixed in a body and the other maintaining its direction in inertial space, with the origins of both at the body's center of gravity, the author derives a closed system of equations describing the motion of the satellite and the gyro rotor when the expressions for the controlling moments are specified. To investigate the optimal problem, the equation system is simplified to reduce its order by linearizing part of the system under the assumption that the rotation of the body takes place in a very small time interval. The further assumption is made that there are no external moments acting on the system.

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USSR

UDC 547.586 + 547.539

MILEVSKAYA, V. B., BELINSKAYA, R. V., and YAGUPOL'SKIY, L. M., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Reaction of Homophthalic Acid With Phosphorus Pentachloride"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 10, Oct 73, pp 2145-2149

Abstract: Reaction of homophthalic acid with phosphorus pentachloride yields a mixture of α,α -dichlorohomophthalic acid dichloride (I), 3-chloroisocoumarin (II), and 3,3,4,4-tetrachloro-3,4-dihydroisocoumarin (III). The latter can also be obtained from 3-chloroisocoumarin. Reacting PCl_5 with III leads to the formation of 1,1,3,3,4,4-hexachloroisochromane. The dichloride I reacted with aniline, 4-chloroaniline and 2,4-dichloroaniline in benzene solution gives quantitative yields of respective dianilides.

1/1

Acc. Nr: **AP0047231**

Ref. Code: **URO504**

PRIMARY SOURCE: **Terapevticheskiy Arkhiv, 1970, Vol 42, Nr 1, pp 80-83**

USE OF INDOMETACYN IN INTERNAL AND HEMATOLOGICAL CLINICAL PRACTICE

Yu. L. Milevskaya

Indometacyn (Inteban, indocida) was tested in 168 patients with diseases of the joints, leukemia and other hematological diseases. The observations showed that the preparation has marked analgetic, antipyretic and antiphlogistic action, it produces a good therapeutic effect in patients with chronic diseases of the joints. In some cases it allows corticoid therapy to be reduced or completely discontinued. The preparation doses fluctuate from 50 to 125 mg daily. In most of the cases the preparation makes a temporary effect and repeated courses of treatment are required. The preparation can be successfully used as a symptomatic substance in patients with leukemia, ossalgia and protracted fever. The effect obtained competes and in some cases supersedes the results of corticosteroid therapy. Side effects are of a temporary nature mainly affecting the central nervous system and the gastro-intestinal tract. The danger is in the possibility of exacerbation of peptic ulcer and occurrence of hemorrhage from the gastro-intestinal tract. As distinct from corticosteroids in prolonged use the preparation does not cause disturbance in metabolic processes in the organism and does not change the function of the adrenal glands.

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REEL/FRAME
19790735

RU 2

USSR

UDC: 621.315.592

ZOLOTOUKHIN, A. A., MILEVSKIY, L. S., SKOL'SKIY, I. L., and SIDOROV, Yu. A.

"Effect of Iron Atoms on the Electrical Characteristics of Plastic Silicon Deformation"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1961-1965

Abstract: Experiments are described for the detection of effects connected with impure atmospheres by generating supersaturation in silicon crystals with various contents of oxygen with iron impurities. The reason for this is that extreme dislocations in germanium can only be obtained for a short time after low-temperature thermal shock without such atmospheres. This investigation was conducted by analyzing the temperature dependence of the Hall effect. The specimens used were monocrystals of n and p type silicon with minimum resistivities of 20 ohm-cm, and alloyed with phosphorus or boron. They were cut in the form of bars measuring 3x3x18 mm and were deformed, before cooling, in an argon atmosphere at 650° C under constant compression stress along the [100] direction. Further data on the preparation of the specimens is

USSR

UDC: 621.315.592

ZOLOTUKHIN, A. A., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1961-1965

given along with curves for carrier concentrations as functions of the temperature and for the Hall mobility in silicon as a function of the temperature.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--DISLOCATION STRUCTURE OF ALUMINUM ANTIMONIDE SINGLE CRYSTALS -U-
 AUTHOR--MILEVSKIY, I.S., ZARIFYANTS, Z.A., ZHUCHKOVA, L.A.
 COUNTRY OF INFO--USSR **M**
 SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 119-24
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, PHYSICS
 TOPIC TAGS--SINGLE CRYSTAL, CRYSTAL LATTICE DISLOCATION, ALUMINUM ANTIMONIDE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1984/0115 STEP NO--UR/0070/70/015/001/0119/0124
 CIRC ACCESSION NO--AP0054911
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 012

CIRC ACCESSION NO--A0054911
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SINGLE CRYSTALS OF ALSB WITH A LOW DISLOCATION D. (10^{-10} - 10^{-9} CM PRIME²NEGATIVE) WERE USED TO STUDY THEIR DISLOCATION STRUCTURE: 4 TYPES OF DISLOCATIONS WITH AXES PARALLEL TO THE (112) DIRECTION WERE OBSO.: EDGE AND 30DEGREES DISLOCATION IN THE (111) GLIDE PLANE, A 54DEGREES DISLOCATION IN THE (110) GLIDE PLANE, AND A 73DEGREES DISLOCATION IN THE (113) GLIDE PLANE, AS WELL AS 2 TYPES OF SIMPLE DISLOCATION: AN EDGE DISLOCATION IN THE (100) GLIDE PLANE AND A 60DEGREES DISLOCATION ALONG THE (110) DIRECTION. ALL INVESTIGATED AT. DISLOCATIONS HAD THE BURGERS VECTOR B EQUALS $a/2$ (110) EQUALS 4.35 . ANGSTROMS. MACRODISLOCATIONS WERE OBSO. AT THE THINNING BOUNDARIES. THE PHOTOELASTIC CONSTS. OF THE MATERIAL WERE DEND.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--16SEP70
TITLE--KINETICS OF THE DECOMPOSITION OF A CHROMIUM SOLID SOLUTION IN
SILICON -U-
AUTHOR--(103)-BENDIK, N.T., GARNYK, V.S., MILEVSKIY, L.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1) 190-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SOLID SOLUTION, CHEMICAL DECOMPOSITION, THERMAL EFFECT,
CHEMICAL REACTION KINETICS, CHROMIUM, SILICON, ELECTRON PARAMAGNETIC
RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1980/0241

STEP NO--UR/0181/70/012/001/0190/0145

CIRC ACCESSION NO--AP0048520

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMPN. OF THE SOLID SOLN. OF CR IN SI WAS INVESTIGATED BY EPR. ANAL. OF THE EXPTL. CURVES OF THE DECOMPN. IN TERMS OF THE DIFFUSION THEORY OF HAM POINTS TO THE EXISTENCE OF DEFECTS OF VARIOUS SYMMETRIES ON WHICH SEPN. OF CR FROM THE SOLN. TAKES PLACE. THE D. WAS EVALUATED FROM 10 PRIME6 TO 10 PRIME7 CM PRIME NEGATIVE2. THE TEMP. DEPENDENCE OF THE DIFFUSION COEFF. OF CR IN SI WAS INVESTIGATED AT 900-1250DEGREES, WHICH IS GIVEN BY THE EXPRESSION D EQUALS $0.01 \exp(\text{MINUS } 23,000-RT)$. THE TEMP. DEPENDENCE OF THE CONST. OF DECOMPN. TIME τ CAN BE DESCRIBED BY THE EXPRESSION τ EQUALS $2.7 \text{ TIMES } 10 \text{ PRIME NEGATIVE9 } \exp(21,000-RT)$.

USSR

UDC 621.372.832.43(089.8)

MERKIN, E. I., MILEVSKIY, N. P., and RUBIN, A. YE.

"A Resonant Ferrite Isolator"

USSR Author's Certificate No 281579, filed 28 Feb 69, published 30 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B186 F)

Translation: The proposed resonant ferrite isolator contains a strip line with polarizing loops. To reduce direct losses, the central conductor of the line at the point of connection of the loops is made with open holes.

1/1

Composite Materials

SSSR

UDC 539.4

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

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

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

Abstract: Experimental data obtained in tests of an aluminum alloy reinforced with boron fibers are presented. Alloy D16 foil had boron fibers pressed into it in a vacuum at high temperature. The lattice spacing of the fibers and thickness of the foil were such that the fibers were positioned in a hexagonal configuration. Samples 6 mm wide were cut on an electric spark machine from plates of the composite material measuring 50 x 100 mm and 0.7-2.5 mm thick. Experimental curves of the composite under compression were plotted in order to determine shear strength. Comparison of these graphs with corresponding curves for the matrix material yielded compression curves for the fibers which turned out to be straight lines up to a stress of 1200 kg/mm². The optimum volume percentage of fibers in the composite was established ($V_f = 1/3$) for

a compression load in the direction of reinforcement. Six figures, two tables, 8 bibliographic references.

1/1

Composite Materials

USSR

UDC 539.4

MILEYKO, S. T., Moscow

"Creep and Stress-Rupture Strength of a Fibrous Composite"

Kiev, Problemy Prochnosti, No 7, 1971, pp 3-10

Abstract: A study was made of a model of a composite consisting of a creeping matrix and discrete rigid fibers under creep conditions. The rigidity of this model construction is defined. The critical parameters of the fiber are found and the stress distribution along the fiber turns out to be a random function, the first and second moments of which can be found approximately. The rupture time of the composite was determined. The results of the calculation by the proposed model agree qualitatively with the published experimental data.

The discussion is limited to the case of a creeping metallic matrix, the behavior of which can be described by the power law

$$\dot{\epsilon}'' = \epsilon'' = \epsilon_m (\sigma''/\sigma_m)^m,$$

where ϵ_m , σ_m and m are constants, one of which can be selected arbitrarily. The
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USSR

MILEYKO, S. T., Problemy Prochnosti, No 7, 1971, pp 3-10

analysis is valid only when the geometry of the reinforcing is such that the distances between the inclusions are sufficiently large and the properties of the matrix remain invariant. These restrictions can be eliminated by introducing the characteristic linear dimension into the model.

2/2

USSR

UDC 678.539.4.01

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

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

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

Abstract: A study was made of the failure of boronaluminum, a composite material that is typical of the metal-brittle fiber class of materials. Dispersion-hardening D16 aluminum alloy served as the matrix. Two types of boron fibers (average strength 180 and 250 kg mm²) were used for reinforcement. The best strength properties were found in specimens with the most uniform distribution of boron fibers. Conditions are formulated under which rupture in the composite can be prevented. Six figures, two tables, eight formulas, ten bibliographic references.

1/1

- 9 -

Acc. Nr:

AP0055674

Abstracting Service: U-70
INTERNAT. AEROSPACE ANST.

Ref. Code:

UK 0000

A7026671 Steady state creep of a composite material with short fibres. S. I. Milgko (Akademiya Nauk SSSR, Institut Fiziki Tverdogo Tela, Moscow, USSR). *Journal of Materials Science*, vol. 5, Mar. 1970, p. 254-261. 7 refs.

Study of the effect of such parameters of the composite as the fiber aspect ratio, the volume fraction of fibers, and the distribution of fibers in a matrix on the steady-state creep behavior of composite with short fibers. The shear within the a matrix volume is assumed to be an important process during the creep of composite material reinforced with short rigid fibers. The rate of elongation of such a composite with certain fiber distribution can be estimated. The agreement with a few experimental data is reasonably good. Z.W.

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REEL/FRAME

.19840983

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DEPARTMENT OF THE NAVY
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NAV/HFSC
FRANK-2005-11

CR/0
Jorg

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE:

The Development of Applied Methods in Problems of
Static Calculation of Thin-Walled Three-Dimensional
Systems (Shells and Foils)

AUTHOR(S):

Zastitsya prikladnykh metodov v zadachakh staticheskogo
rascheta tonkostennyykh prostranstvennykh sistem (obolochki i
listy) /
A. M. Mikhlin, I. Ye. I. and Kozlov, V. A.

PAGES:

24

SOURCE:

State Admission Conference on Shells and Foils
Theory 1966

ORIGINAL LANGUAGE: Russian

TRANSLATOR:

C

MISC TRANSLATION NO. 3403

APPROVED: F. T. K.
DATE: 21 FEBRUARY 1971

MILEY KOVSKIY, I. Ye.

USSR

UDC 632.95

MIL'GROM, A. Ye., and PALEYEV, B. B.

"A Method of Synthesizing Derivatives of N,N'-Dialkylamidines Containing the 1,3-Dioxane Ring"

USSR Authors' Certificate No 256781, filed 19 Sep 68, published 11 Jun 70 (from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N622 P)

Translation: The physiologically active compounds 2-MeC(=NR)N(R)CH₂- and 4-MeC(=NR)N(R)CH₂-dioxanes-1,3 (I and II) (R = alkyl) are synthesized by interacting N,N'-dialkylamidine with 2- or 4-BrCH₂-1,3-dioxane (IIIa, b). A mixture of 0.03 mole of IIIa and 0.06 mole of N,N'-dimethylacetamide is heated for 8 hours at 110-120°C. Then the mixture is filtered, the residue is washed in absolute ether, the filtrate is dried, and the residue is distilled in a vacuum. The resultant product is compound I (R = Me), yield 75%, boiling point 110°C/2, n_D²⁰ 1.4805, d₄²⁰ 1.046. Compound II is analogously synthesized from IIIb and N,N'-dimethylacetamide (R = Me), yield 64%, boiling point 105°C/2, n_D²⁰ 1.4739, d₄²⁰ 1.016.

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UDC 621.791.92:669.35'71.004.12

MILICHENKO, S. L., and BYKOVSKIY, O. G., Zaporozhye Machine Building Institute imeni V. Ya. Chubar

"Structure and Properties of Deposited Aluminum Bronzes"

Moscow, Svarochnoye Proizvodstvo, No 9, Sep 70, pp 28-30

Abstract: Aluminum bronzes, which combine high mechanical and important service properties (good corrosion cavitation resistance, low coefficient of sliding friction, etc.), are finding increasing application in technology as constructional materials and as a deposited layer in the fabrication of bimetallic parts. In the process of the welding and deposition of aluminum two-phase bronzes, various transformations determining the final phase composition, structure, and service properties of the alloys may occur in both the deposited metal and the weld-affected zone. This study shows that the production of an equilibrium structure in deposited aluminum bronzes is not related to specific cooling conditions. Aluminum bronzes of eutectoid composition with 10-15% aluminum may contain a considerable amount of unstable β' -phase capable of undergoing nondiffusion martensitic transformation $\beta' \rightarrow \beta''$ due to microplastic deformation. Such transformations

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MILLIGENKO, S. L., and BYKOVSKIY, O. G., Svarochenoye Proizvodstvo, No 9, Sep 70, pp 28-30

will raise the elastic properties of microvolumes and, generally, improve the service characteristics of the alloy, particularly under the application of microimpact stresses.

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USSR

UDC 621.791.927:669.15-194

MILICHENKO, S. L., ALEKSANDROV, A. G., PIN'KOVSKIY, I. V., Zaporozh'ye
Machine Building Institute

"Erosion Resistance of Surfaced Steels in the Nickel-Titanium-Aluminum
System with Ageing Martensite"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 1972, pp 55-58.

Abstract: The hydraulic erosion wear resistance of metal surfaced with electrode materials based on alloys such as 18 Ni-Co-Mo-Ti with low cobalt content, as well as high-strength cobalt-free alloys in this system was studied. The erosion resistance of the surfaced metal was estimated on the basis of the weight loss of specimens tested on an impact erosion test stand. The erosion resistance of surfaced metal with ageing martensite was found to be determined by the quantity of martensite in the structure and its hardening during ageing. Cobalt-free surfaced metal with ageing martensite structure had high hardness and erosion resistance. Following ageing, equal to the erosion resistance of aged nickel-cobalt-molybdenum surfaced metal with high cobalt content.

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UDC 621.791.042.048

MILICHENKO, S. L., and MATVEYSHIN, Ye. N., Zaporozha Machine-Building Institute imeni V. Ya. Chubar'

"Welding Materials for Wear-Resistant Copper and Nickel Alloys"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 60-62

Abstract: The purpose of the work described in this article was to create materials for fusing the parts of machines for continuous brewing of cellulose, the details being subject to wear due to friction in a caustic medium in steam with stainless steel. An investigation of such materials as aluminum and silicon-manganese bronze, high-chromic cast iron, and "Ni-Resist" as well as several copper-nickel alloys was made. These investigations showed that the materials most resistant to wear were the copper-nickel alloys with a composition of 46-50% Ni and 4.0-6.0% Si. The introduction of silicon causes the separation of the hardened phase of Ni_3Si which forms a wear-resistant substance. The welding seam should contain a sufficient quantity of nitride-forming elements in welding nickel alloys, since investigations have shown that pores and cracks in the welds are caused by nitrogen and oxygen. Tests were also made to establish the optimal composition of plating on the electrodes for making the melts.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EPR STUDY OF FREE RADICALS IN GAMMA IRRADIATED COTTON CELLULOSE -U-

AUTHOR--(03)-KHAMIDOV, D.S., AZIZOV, U.A., MILINCHUK, V.K.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 39-42

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EPR, FREE RADICAL, GAMMA RAY, FIBER PLANT, CELLULOSE

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CIRC ACCESSION NO--AP0122587
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. EPR SPECTRA OF CELLULOSE
IRRADIATED WITH GAMMA RAYS AT 77-300DEGREEK ARE DISCUSSED AND
INTERPRETED. THE EVIDENCE IS PRESENTED IN SUPPORT OF THE EXISTENCE OF
OH, CH₂ OH, CHO, AND I FREE RADICALS.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
 TITLE--PHOTO INITIATED REACTIONS OF FREE RADICALS IN POLYMERS. PEROXIDE
 RADICALS IN POLYPROPYLENE -U-
 AUTHOR-(03)-KLINSHPONT, E.R., MILINCHUK, V.K., PSHEZHERSKIY, S.YA.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 88-91
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS
 TOPIC TAGS--GAMMA RADIATION, PHOTOEFFECT, FREE RADICAL, POLYPROPYLENE,
 PLASTIC FILM, EPR SPECTRUM, PEROXIDE

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STEP NO--UR/0460/70/012/001/0098/0091

CIRC. ACCESSION NO--AP0055638

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2/2 034

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PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AP0055638

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. IRRADN. OF ISOTACTIC POLYPROPYLENE (I) FILMS (80 MU THICK) WITH GAMMA RAYS (15-200 MEGARADS) PRODUCED ALLYL (II) AND POLYENE (III) RADICALS. THE PHOTO INITIATED REACTIONS OF THE RADICALS WERE INVESTIGATED BY EPR SPECTROSCOPY AT 77DEGREEK. ON CONTACT WITH O, II AND III RADICALS WERE CONVERTED TO PEROXIDE RADICALS R PRIME1 AND R PRIME2 HAVING IDENTICAL EPR SPECTRA. THE TOTAL CONCN. OF R PRIME1 AND R PRIME2 IN I INCREASED 3 FOLD FOLLOWING IRRADN. WITH LIGHT OF LAMBDA IS SMALLER THAN 280 NM. A MERCHANISM, INVOLVING THE FORMATION OF REACTIVE SITES BY A CHAIN PROCESS, WAS PROPOSED.

UNCLASSIFIED

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Abstracting Service:
CHEMICAL ABST.

Ref. Code
570 21R 0456

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90945a Structure of free radicals in γ -irradiated polypropylene. ~~Klinshpont, E. H.; Moinchuk, V. K. (Fiz.-Khim. Inst. im. Karпова, Moscow, USSR). Khim. Vys. Energ. 1970, 4(1), 84-6 (Russ). Polypropylene fibers were irradiated with γ -rays at 77°K. EPR spectra were obtained immediately after the irradiation, after the irradiation with γ -rays and uv light, or after the irradiation with γ -rays and warming up to 300°K.~~ CPJR 1

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UDC: 535.51

SAMSON, A. M., KOTOMISEVA, L. A., and MILINKEVICH, A. V.

"Transmission of Short Radiation Pulses Through Linear Amplifying and Absorbent Media"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 17, No 2, 1972, pp 228-236

Abstract: A theoretical and rigorous solution is proposed to cover one aspect of the problem of propagating light pulses through various types of media. This single aspect involves the laws of propagating short coherent pulses in linear amplifying or absorbent media, with the pulses defined as those whose spectral width is small compared with the uniform width of the corresponding amplification or absorption band. The solution is obtained through the Laplace transform and yields simple formulas for the electric field intensity as well as the polarization of the medium for any form and frequency of the incident pulse. Among the advantages claimed for the authors' method are its simplicity and the fact that the approximations sometimes required for simplifying the calculations can be made in finite form. The analytic computations for the resonance case are compared on the electronic computer with the solutions of the Maxwell equations and the density matrix, and a good agreement between the two methods is found.

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USSR

UDC: 621.378

ARKAD'YEV, D. I., MILINKIS, B. M., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Optoelectronics"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 12-20

Abstract: The article is a survey of devices based on optoelectronics, i.e. the use of electromagnetic oscillations in the optical range, including U-V and I-R, to make connections between elements in information systems. The discovery of the laser effect was historically the main driving force behind the development of optoelectronics. Considerable space is devoted to the laser principle and various types of lasers with their basic characteristics. Modulators for controlling the phase, frequency, amplitude and polarization of a light beam are discussed. Electromechanical, ultrasonic and electro-optical methods of laser beam deflection are explained. Devices for registration of optical signals are considered and the principles of fiber optics are outlined. A bright future is seen for optoelectronics in view of the recent development of holography, large laser television screens, techniques for communication between spacecraft in deep space, and devices based on nonlinear optics.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOLUBILITY OF NITROGEN IN IRON,SILICON ALLOYS -U-

AUTHOR-(02)-MILINSKAYA, I.N., TOMILIN, I.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 255-61

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IRON ALLOY, SILICON ALLOY, NITROGEN, SOLUBILITY, INTERMETALLIC
COMPOUND, NITRIDE, GAS CONTAINING METAL, METAL CONTAINING, NITRIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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