

USSR

UDC 621.357:669.268.7

KHROMOV, V. Ye., Candidate of Technical Sciences

"Methods of Production of Even Precipitation of Chromium on the Surfaces of Bodies of Rotation, Considering Polarization"

Moscow, Vestnik Mashinostroyeniya, No 1, Jan 71, pages 57-59

Abstract: Methods are described for quantitative determination of the evenness of distribution of current or metal on parts with surfaces consisting of bodies of rotation. The conditions under which even coating can be produced on cylindrical surfaces are studied using a cylindrical stepped cathode as an example. The interelectrode distances are calculated considering polarization. The dependence of anode potential on current density is established for a sulphate electrolyte with various holding times of the steel electrode.

1/1

USSR

UDC 577.153

BRESTKIN, A. P., ROZENCART, E. V., SOBOLEVA, I. N., KHROMOV-BORISOV, N. V.,
INDENBOM, M. L., TIKHONOVA, L. N., ABDUVAKHABOV, A. A., and TOREHURATOV, K.,
Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenova,
Academy of Sciences USSR, Institute of Experimental Medicine, Academy of
Medical Sciences USSR, Leningrad, and Tashkent State University imeni V. I.
Lenin

"Unproductive Bonding of Cholinesterase Substrate"

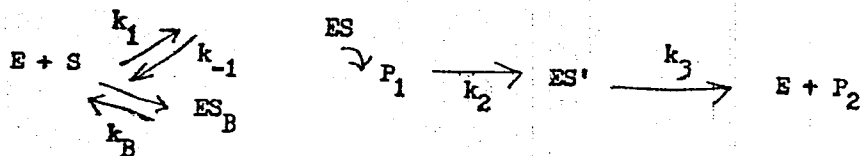
Moscow, Doklady Akademii Nauk SSSSR, Vol 205, No 3, 1972, pp 717-720

Abstract: Experiments have shown that the rate-limiting step in the Michaelis-Menton substrate reaction is the acylation or deacylation rather than the initial formation of the Michaelis complex. The specificity of the cholinesterase is also determined by the latter steps in the reaction and it is only the L optical isomer of acetyl- β -methylcholine which is hydrolyzed by the acetylcholinesterase. The D isomer is an inhibitor as it is adsorbed on the active sites but not subsequently removed. The system can be generalized as follows:

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BRESTKIN, A. P., et al., Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 717-720



where E is the enzyme; S, the substrate; ES, the Michaelis complex; ES', the acylating enzyme; ES_B, the unproductive complex; and P₁ and P₂, the products of the reaction - alcohols and acids. The general implications of differences in the relative magnitudes of k_1 , k_{-1} , k_2 , k_3 , and k_B are presented. Actual data are given for five substrates.

2/2

KHROMOV, Borisov, N. V.

MRS 58042
28 Jan 73

CONTROLLED HYPERMAGNETS AND CANGLIOLBLOCKERS WITH A DISULFIDE BOND

UDC 615.216.5+615.217.4

JPRS 58042
23 January 1973

[Article by N. V. Khromov, Borisov, N. V., Gmitin, and I. G. Khromov, Institute of Experimental Medicine, USSR, Institute of Evolutionary Physiology and Biochemistry, Leningrad, USSR, and Institute of Experimental Physiology and Biochemistry, Leningrad, USSR, Russian, No. 11, 1972, submitted 16 July 1971, pp 21-26]

Until recently, there was not developed effective methods of control of the effect of biologically active substances which would not be based, in the final analysis, upon the use of natural protective forces of the organism (biochemical transformation of the substances which lead to its inactivation and excretion). Methods of active chemical effect on the rate of medication in the organism may be more effective and operational. We assumed an experimental model of such effect, based upon the following principles: a medicine with a weak link in the molecule is used as well as an agent capable of destroying this link 1/1-3/. We used a disulfide bond as the weak link and some nucleophilic compounds, sodium sulfite, for example, which destroy it, as agents.

The first model compound-I (see Table), synthesized by us for checking this hypothesis belongs to the pharmacological class of myorelaxants. It contains an aromatic disulfide bond, weakened by the electron acceptor effect of quaternary ammonia groups. In an aqueous solution, at room temperature it is easily destroyed by the effect of sodium sulfite, forming a bunt salt in the form of a zwitterion (II) and an arylthiol (III) 1/1.



USSR

UDC 615.216.5:546.39].07

KHROMOV-BORISOV, N. V., IZHENBOM, M. L. and DANILOV, A. F.; Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad

"Bis-Quaternary-Ammonium Curariform Compounds with Rigid Molecular Structure"

Moscow, Khimiko-Farmatsevticheskly Zhurnal, Vol 5, No 9, 1971, pp 3-7

Abstract: It has been presumed, in the case of the bis-quaternary-ammonium compounds, which exhibit the highest curariform action, that the anion portions in the cholinereceptors of the skeletal muscles are situated at distances of 14-15 Å apart and also at distances of 20-22 Å (the so-called C-10 and C-16 structures, respectively); but this has not been verified in the case of structure C-16. The authors synthesized two series of alkaloids -- derivatives of naphthalene-peritetracarboxylic and pyromellitic acids, which they subjected to chemico-physical and biological tests. All compounds synthesized had rigid molecular structure and near-optimal inter-N distances. Basic physico-chemical data, including structural formulas, were obtained.

All the compounds were powerful muscle relaxants, all except one (of the n.-p. t. group) being more effective than d-tubocurarine; but the pyromellitic acid derivatives were only 3-16.5% as effective as the other group, probably owing to their shorter inter-N distance. With substitution of ethyl for methyl

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KHROMOV-BORISOV, N. V., et al., *Khimiko-Farmatsevticheskii Zhurnal*, Vol 5,
No 9, 1971, pp 3-7

radicals in the cation groups, physiological activity was definitely increased
in both groups of compounds tested. The C-16 structure was considered verified
by the tests.

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UDC 546.791.666

USSR

KOVBA, L. M., POLUNINA, G. P. and KHROMOVA, M. M.

"Toward the Study of Dual Oxides of Erbium and Uranium"

Leningrad, Radiokhimiya, Vol XI, No. 5, pp 601 - 603

Abstract: Data are insufficient on the variation of the degree of oxidation of uranium during interaction of its lower and higher oxides with Er_2O_3 ,

since various studies have revealed the presence of compounds of type

R_6UO_{12} , among others, within $R_2O-UO_2-O_2$ systems. The present study was

undertaken to elucidate the phase relationships of the $U_3O_8-Er_2O_3-O_2$ system.

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KGVBA, L. M., et al., Leningrad, Radiokhimiya, Vol XI, No 5, pp 601-603

Ammonium uranate and erbium hydroxide were precipitated jointly from nitric acid solution, and after heating the degree of oxidation of the uranium was determined vanadatometrically and coulometrically. Roentgen-phase analysis was made.

Complete data from the phase and chemical analyses are included in the paper.

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USSR

UDC 541.127.4

KHROMOVA, N. P., LEGENCHENKO, I. A., and RAKHUBENKO, Institute of General and Inorganic Chemistry, Ukrainian Academy of Sciences (Laboratories in Odessa)

"Exchange Equilibrium Between Anions of the Ethylene Diamine Tetraacetate Complexes of the Rare Earth Elements, and Chlorine Anions in a Solution - Anionite AV-21 and AN-261 System"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol XXXVII, No 8, 1971, pp 838-839

Abstract: Sorption equilibrium of EDT complexes of La, Nd, Gd, and Er on the Soviet-developed AV-21 and AN-261 in chloride form was studied, by the method developed earlier by the authors.

Weights of the ionite w were varied from 0.25 to 5.0 g, solution concentration from $4 \cdot 10^{-3}$ to $16 \cdot 10^{-3}$ mol.

Both ionites showed nonequivalent exchange, which was more pronounced than for AV-17. The low-base AN-261 ionite was strongly hydrolyzed during the tests; attempts to raise the pH to 4 led to a sharp drop in sorption capacity, and dislocation of equivalence exceeded the equivalent sorption of the rare-earth complexes. For both ion-exchangers, the degree of non-equivalence varied, depending on solution pH. In neither case did variation in sorption equilibrium obey the mass-action law. Empirical formula and graphs are included in the paper. 1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE HEAT TRANSFER MEDIUM IN THE VULCANIZATION BATH ON THE
PROPERTIES OF POROUS FILMS -U-
AUTHOR--(03)-OSTROVSKIY, V.I., KHROMOVA, N.S., PAVLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., ^KTEKHNOU. LEGK. PROM. 1970, (2), 48-53
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MILITARY SCIENCES
TOPIC TAGS--VULCANIZATION, GLYCEROL, ORGANOSILICON COMPOUND, CARBOXYLATE
RUBBER, ORGANIC ISOCYANATE, FOOTGEAR, WATERPROOFING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1117 STEP NO--UR/0123/70/000/002/0048/0053
CIRC ACCESSION NO--AT0134805
UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AT0134805
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. GLYCEROL, SILICONES, AND EUTETIC MIXTS. OF MOLTEN SALTS WERE INVESTIGATED AS HEAT TRANSFER MEDIA IN THE VULCANIZATION BATH FOR PROCESSING RUBBER CONTG. CARBOXYL GROUPS WITH DIISOCYANATES. THE FILMS OBTAINED CAN BE APPLIED AS PRIMERS OR COATINGS FOR THE OUTER PARTS OF FOOTWEAR. FILMS VULCANIZED IN EUTECTIC MIXTS. HAD THE BEST PROPERTIES (HIGH STABILITY, SMALL SWELLING IN ETOAC). SILICONE PRODUCTS CAN BE USED, BUT WITH LIMITATIONS; GLYCEROL REACTS WITH A CONSIDERABLE AMT. OF DIISOCYANATE. THE HYDROPHILIC PROPERTIES OF FILMS WERE GREATER WHEN THE SAMPLES WERE VULCANIZED IN A WATER SOL. HEAT TRANSFER MEDIUM.
FACILITY: MOSK. TEKHNDL. INST. LEGK. PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTION OF CARBOXYL CONTAINING RUBBERS WITH DIISOCYANATES -U-
AUTHOR--(04)--PROKHOROV, L.I., SUTYRINA, G.A., KHROMOVA, N.S., PAVLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3), 7-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CARBOXYLATE RUBBER, ISOCYANATE, TENSILE STRENGTH, MATERIAL DEFORMATION, POLYMER CROSSLINKING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0452 STEP NO--UR/0138/70/029/003/0007/0009
CIRC ACCESSION NO--AP0119388
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119388

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FILMS PREPD. BY EVAPG. AT ROOM TEMP. THE SOLNS. OF SKS-30-1 RUBBER AND TOLYLENE DIISOCYANATE (I) IN ACOBU HAD 20-30 KG-CM PRIME2 TENSILE STRENGTH AT BREAK (SIGMA) AS COMPARED WITH THE FILMS PREPD. AS ABOVE, BUT WITHOUT I. ANNEALING THE FILMS CONTG. I INCREASED SIGMA LESS THAN OR EQUAL TO 70 KG-CM PRIME2. THE CHANGES OF THE DEFORMATION CHARACTERISTICS OF THE FILMS CONTG. I SHOWED THAT THE CROSSLINKING INCREASES WITH I ANT. ISOCYANATE GROUPS REACT DURING CROSSLINKING WITH CO SUB2 H GROUPS. FACILITY: MOSK. TEKHNOL. INST. LEGK. PROM. MOSCOW, USSR.

UNCLASSIFIED

Pharmacology and Toxicology

UDC

UDC: 615.787.017.8-053-092+612.822.3.087-
053+591.18-135:577.87:577.17

PROZOROVSKIY, V. B., SEPPEN, M. A., and KHROMOVA, O. N., Central Scientific Research Laboratory, Pediatric Medical Institute, Leningrad

"Age Differences in the Sensitivity of Rabbit Brains to Choline-Potentiating Preparations"

Elektrofiziologicheskiye Issledovaniya Tsentral'noy Nervnoy Systemy Pozvonochnykh. (Electrophysiological Studies of the Central Nervous System of Vertebrates), Leningrad, "Nauka, 1970, pp 109-113

Abstract: The object of the investigations was to determine age differences in the sensitivity of rabbit brains to armin, galanthamine, proserine, oxazyl, and eserine, all choline-potentiating preparations. This determination is important for establishing rational doses of preparations and regimes of functional and biochemical systems in ontogeny. Adult rabbits and young rabbits 1.5 months of age were used in the experiments. Individual doses of the preparations were administered to the experimental animals, and the duration of the activating reaction was determined by electroencephalography with the use of steel electrodes inserted into the cranium of the animals. Thirty minutes prior to the beginning of the experiments, the animals were given chloralose and metacin respectively
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PROZOROVSKIY, V. B., et al, Elektrofiziologicheskiye Issledovaniya Tsentral'noy Nervnoy Systemy Pozvonochnykh, (Electrophysiological Studies of the Central Nervous System of Vertebrates), Leningrad, "Nauka", 1970, pp 109-113

in doses of 20 and 2.5 mg/kg body weight, the former to develop a state of drowsiness, and the second -- to prevent the excitation of the peripheral M-cholinergic systems. At the same time anticholinesterase activity of the preparations was determined in vitro with the use of the Hestrin method. The investigations established that the brain sensitivity of the young rabbits is by 1.2-1.7 times lower with respect to armin, galanthamine, proserine, and eserine than that of adult animals, and that doses of these preparations required to induce an activity reaction respectively in young rabbits and adult animals are as follows (in mg/kg): 0.089 ± 0.002 and 0.052 ± 0.007 for armin; 1.100 ± 0.0107 and 0.900 ± 0.039 for galanthamine; 0.190 ± 0.020 and 0.130 ± 0.016 for proserine; 0.079 ± 0.004 and 0.054 ± 0.022 for eserine. The exact dosage of oxazyl could not be determined because a dose of 0.2 mg/kg of the preparation killed the young animals. No correlation between the anticholinesterase activity of the preparations and their effect on the electroencephalogram was established.

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1/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--A STUDY OF THE ANTIMYORELAXANT EFFECT OF CHOLINOPOTENTIATING AGENTS

-U-
AUTHOR--(04)--PRCZUROVSKIY, V.B., VLADEYEVA, N.V., KHROMOVA, U.N.,
DUBOVITSKAYA, S.I.
CCOUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 51-54
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE RELAXANT, INHIBITION, CHOLINESTERASE, BRAIN, MUSCLE
PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0703

STEP NO--UR/0219/70/049/006/0051/0054

CIRC ACCESSION NO--AP0131302

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131302

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE ANTICURARE AND ANTIPARAMIONIC EFFECT OF CHOLINOPOTENTIATING AGENTS (ARMIN, GALANTAMINE, OXASYL, PROSERINE, PHOSPHACOL, ESERINE) WAS STUDIED IN EXPERIMENTS ON FROGS AND RATS. THE ANTIMYORELAXANT ACTIVITY DID NOT CORRELATE WITH ANTICHOLINESTERASE TO TOTAL CHOLINESTERASE OF FROG MUSCLES AND ACETYLCHOLINESTERASE OF RAT BRAIN. THE MARKEDNESS OF ANTIPARAMIONIC ACTIVITY OF PREPARATIONS IN EXPERIMENTS ON RATS DOES NOT CORRESPOND WITH DIAPHRAGMATIC CHOLINESTERASE INHIBITION CAUSED BY THEM. ANTIMYORELAXANT ACTIVITY IN EXPERIMENTS ON FROGS CLOSELY CORRELATE WITH THE ABILITY OF PREPARATIONS TO SENSITIZE FROG MUSCULAR ABDOMINIS RECTIS TO ACETYLCHOLINE. A CONCLUSION IS MADE THAT ANTICURARE AND, PARTICULARLY, ANTIPARAMIONIC EFFECTS OF CHOLINOPOTENTIATING AGENTS DEPEND NOT ONLY ON CHOLINESTERASE INHIBITION, BUT ALSO UPON THE CHOLINSENSITIZING ACTION.

FACILITY: LENINGRAD PEDIATRIC MEDICAL INSTITUTE.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.216.5.011.5

KHROMOV-BORISOV, N.V., Department of Pharmacology, Institute of Experimental
Medicine, Academy of Medical Sciences USSR, Leningrad

"Structure of d-tubocurarine"

Moscow, Farmakologiya i Toksikologiya, No 5, 1972, pp 583-587

Abstract: The author reviews the recent literature on the tertiary-quaternary structure of d-tubocurarine and describes a tertiary-quaternary derivative of azobenzene (4-dimethylamino-4'-trimethylammonioazobenzene) which has some structural parameters in common with d-tubocurarine. The relationship between the conformation of muscle relaxants and their mechanism of action is also discussed. The d-tubocurarine molecule, once thought to be a model of a bis-quaternary compound with an absolutely rigid structure, has now been shown to be a monoquaternary compound that permits certain conformational changes. The N-N distance varies from decamethonium to hexamethonium.

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Acc. Nr:

AP0042047

Abstracting Service: K
CHEMICAL ABST. 4/70

Ref. Code:

UR0366

89612h Alkylated aromatic amines. IX. Quaternization of a mixture of aniline with dimethyl and with diethylaniline. Zakharova, N. A.; Khromov-Borisov, N. V. (Inst. Eksp. Med., Leningrad, USSR). Zh. Org. Khim. 1970, 6(1), 124-6 (Russ). In the reaction of MeI with 1 equiv. 1:1 PhNH₂ (pK_a 4.58)-PhNMe₂ (pK_a 5.06) mixt., 1/3 PhNMe₂ and 2/3 PhNH₂ react. In the reaction of MeI with 1 equiv. 1:1 PhNH₂-PhNEt₂ (pK_a 6.56), practically only PhNH₂ reacts. This order of reactivity, opposite to what might be expected from the basicity of these amines, must be due to steric factors. CPJR

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REEL/FRAME
19751944

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Acc. Nr:

AP0042046

Abstracting Service:

CHEMICAL ABST.

4170

Ref. Code:

UR0366

89611g Alkylated aromatic amines. VIII. Role of the spatial factor in the reaction of methyl iodide with monotertiary p-phenylenediamines. Zakharova, N. A.; Khromov-Bozhenov, N. V. (Inst. Eksp. Med., Leningrad, USSR), *Zh. Org. Khim.* 1970, 6(1), 116-23 (Russ). The reactions were studied of MeI with the equiv. amts. of 1,2,3,4,5-(RR¹N)ZY(R²HN)XC₆H₄ (I) (R, R¹, R², X, Y, and Z given): Me, Me, H, H, H, H; Me, Me, H, Me, H, H; Me, Me, H, Me, Me, H; Me, Me, Me, H, H, H; Me, Me, Me, Me, H, H; Me, Me, Me, Me, Me, H; Me, Me, H, H, H, Me; Me, Et, H, H, H, H; Et, Et, H, H, H, H; Et, Et, H, Me, H, H. The formation of the primary-quaternary or secondary-quaternary salts of I occurs only when the NMe₂ group is present. The quaternization does not take place when the primary-tertiary I contain in the tertiary amino group 1 or more Et groups. The effect of X, Y, and Z substituents on the facility of I quaternization is discussed. CPJR

REEL/FRAME
19751943

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L/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--REGULATION OF THE DURATION OF AUTONOMIC GANGLION BLOCKADE -U-

AUTHOR--(03)--K.H.R.C.M.C.V.BORISOV, N.Y., GMIRO, V.YE., MAGAZANIK, L.G.

COUNTRY OF INFO--USSR

SOURCE--DGKL, AKAD. NAUK SSSR 1970, 191(3), 729-31

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GANGLIOLIC BLOCKING AGENT, CAT, BLOOD PRESSURE, CURARE, SODIUM SULFATE, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1660

STEP NO--UR/0020/70/191/003/0729/0731

CIRC ACCESSION NO--AT0133565

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INJECTION OF DITHIAHEXONIUM (ME
 SUB3 INCH SUB2 CH SUB2 S) SUB2 AT 1-2 MICRO-MOLE-G INTO CATS CAUSED A
 DROP IN ARTERIAL PRESSURE AND DECLINE OF THE TONE OF THE NICTITATING
 MEMBRANE, INDICATING PARTIAL BLOCK OF THE NERVE CONDUCTION VIA THE
 SYMPATHETIC GANGLIA. SIMULTANEOUS INTAKE OF NA SUB2 SO SUB3 RAPIDLY
 INHIBITED THE GANGLION BLOCKING EFFECT OF THIS DRUG BUT THIS WAS NOT THE
 CASE WITH (ME SUB3 INCH SUB2 CH SUB2 CH SUB2) SUB2. THE ACTION OF NA
 SUB2 SO SUB3 APPEARS TO BE THE CLEAVAGE OF THE SS LINK AND FORMATION OF
 IONIC FRAGMENTS OF THE 2 PORTIONS. THE DRUG HAD A STRONG CURARE-LIKE
 ACTION BUT WAS 0.1 AS ACTIVE IN THIS RESPECT AS (ME SUB3 IN(CH SUB2)
 SUB5) SUB2 OR (ME SUB3 INCH SUB2 CH SUB2 CH SUB2 CH SUB2 S) SUB2. THE
 ACTION OF THE LATTER IS BUT LITTLE AFFECTED BY NA SUB2 SO SUB3,
 EVIDENTLY DUE TO WEAKENED AID TO NUCLEOPHILIC ATTACK AT THE SS GROUP BY
 THE MORE REMOTE QUATERNARY N CHARGE. FACILITY: INST. EKSP.
 MED., LENINGRAD, USSR.

UNCLASSIFIED

USSR

Television
UDC: 621.397.001

BALOBANOV, V. G., KHROMOV, B. P., BEZRUKOV, V. N.

"Determining the Limiting Resolution of a Television System from the resultant Aperture Characteristic 'From Light to Light'"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 118-123 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G81)

Translation: It is shown that the threshold reference level from which resolution is read out is not constant, but rather depends on the angular dimensions of the details under examination and the conditions of observation. Graphs are plotted for the reference level as a function of the angular dimensions and the brightness of the background assuming that the signal-to-noise ratio is equal to infinity, and the relative viewing distance is equal to four screen heights. L. M.

USSR

UDC: 621.372.061

BALOBANOV, V. G., KHROMOV, B. P., BEZRUKOV, V. N.

"Dependence of Reference Level on Signal/Noise Ratio"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., 108-113 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A88)

Translation: A procedure is known for determining the resolution of a TV system from the resultant aperture characteristic "from light to light" with the aid of the reference level. It is shown that the reference level for small details depends on the form of the frequency characteristic of the kinescope. Introducing aperture characteristics has no effect on the reference level only when kinescopes are used which introduce insignificant frequency distortions. Curves are given which can be used to calculate the visual resolution. Two illustrations, bibliography of three titles. L. S.

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AA0044231

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243742 ANODE-GRID UNIT of gas-discharge rectifier has an anode shutter and a control grid which are both of spherical shape with a common centre. The absence of a field inside the anode reduces the secondary electron emission and the likelihood of backfires. It also makes for a more robust design and has a higher receiving area of the anode to enable it to operate at high impulse loads.

1.6.68 as 1244022/24-7. I.G. KESAEV et al. (3.10.69.)
Bul 17/14.5.69. Class 21g. Int.Cl. H 01 j.

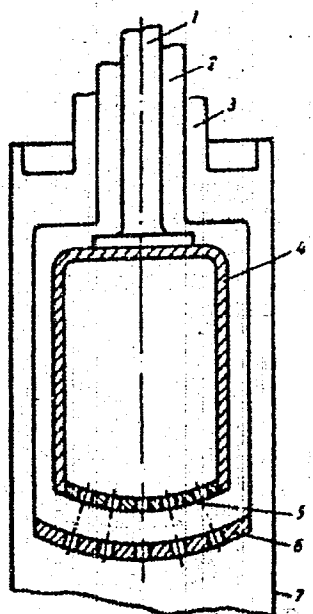
AUTHORS: Kesayev, I. G., Khromoy, Yu. D., Serbinov, A. M.

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19770727

AA0044231



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19770728

gc

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNTHESIS OF AMYLOXYGLYCOLIC ESTERS OF ALIPHATIC ACIDS -U-
AUTHOR--(03)--ZEINALOV, B.K., MEKHTIYEVA, F.A., ~~KHROMUSHINA, E.I.~~
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK AZERB. SSR 1969, 25(9), 23-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, GLYCOLLIC ACID, CARBOXYLIC ACID ESTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1100 STEP NO--UR/0249/70/025/009/0023/0026
CIRC ACCESSION NO--AT0124755
UNCLASSIFIED

Z/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124755

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ESTERS RCD SUB2 CH SUB2 CH SUB2 OC SUB5 H SUB11 (I) WERE PREPD. BY A REACTION OF HOCH SUB2 CH SUB2 OC SUB5 H SUB11 (II) WITH ALIPHATIC ACIDS IN DRY PHME IN THE PRESENCE OF H SUB2 SO SUB4. NEW I (17) (R EQUALS H, ALKYL FROM ME TO C SUB17 H SUB33) WERE PREPD. IN 41-88PERCENT YIELD. THE PHYS. CONSTS. OF THE ESTERS ARE TABULATED.

UNCLASSIFIED

USSR

UDC 621.375.82

VETKIN, V. A., KHROMYKH, A. M.

"Longitudinal Mode Competition in a Ring Laser with an Isotropic Resonator"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 59-68 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D900)

Translation: A theoretical study was made of a ring laser in a longitudinal magnetic field when the anisotropy of the resonator is purely circular. A study was also made of the four-wave mode of generation. Two cases are possible here: the first, in which two pairs of counter, identically polarized circular waves are generated, and a second case, in which two orthogonal pairs of waves are generated. The nonlinear interaction of the traveling wave and the stability of both modes were investigated. Consideration of the structure of the operating levels leads to the fact that in the investigated model the nature of the interaction of the counter waves of different modes differs qualitatively from that obtained by means of the scalar Lamb model for analogous, linearly polarized waves. The interaction of the traveling waves turns out to be such that independently of the structure of the operating levels the condition of stability of the four-wave

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USSR

VETKIN, V. A., KHROMYKH, A. M., V sb. Kvant elektronika (Quantum Electronics-- collection of works), No 3, Moscow, Soviet Radio, 1972, pp 59-68

mode is violated only for an intermode spacing of the same order as the magnitude of the uniform width of the operating transition line. Here, depending on the type of transition, the four-wave mode converts to single mode or the generation conditions of one wave in each mode. The bibliography has 10 entries.

2/2

- 25 -

1/2 051 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THEORY AND CALCULATION OF VIBRATIONS IN AIRCRAFT ENGINES -U-
AUTHOR--KHRONIN, D.V. **K**
COUNTRY OF INFO--USSR
SOURCE--(TEORIYA I RASCHET KOLEBANIY V DVIGATELYAKH LETATEL'NYKH
APPARATOV) MOSCOW, MASHINOSTROYENIYE, 1970, 411 PP
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ENERGY CONVERSION (NON-PROPULSIVE), PROPULSION AND
FUELS
TOPIC TAGS--HANDBOOK, VIBRATION ANALYSIS, VIBRATION THEORY, AIRCRAFT
ENGINE, GAS TURBINE ENGINE, TURBOMACHINE, AERONAUTIC ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1741

STEP NO--UR/0000/70/000/000/0001/0411

CIRC ACCESSION NO--AM0130590

UNCLASSIFIED

2/2 051

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0130590

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
SYMBOLS 5. INTRODUCTION 7. PART I LINEAR VIBRATIONS. CHAPTER 1
SYSTEMS WITH ONE DEGREE OF FREEDOM 11. 2 SYSTEMS WITH MANY DEGREES
OF FREEDOM 46. 3 VIBRATIONS OF ROD ELEMENTS WITH A CONTINUOUSLY
DISTRIBUTED MASS 86. 4 VIBRATIONS AND CRITICAL VELOCITIES OF
ROTATING FLEXIBLE SHAFTS AND ROTORS OF GAS TURBINE ENGINES AND
TURBOMACHINES 147. 5 BENDING VIBRATIONS OF CIRCULAR PLATES AND DISKS
217. 6 CALCULATION OF VIBRATIONS OF COMPLEX COMPOSITE SYSTEMS 272.
PART II NONLINEAR VIBRATIONS. CHAPTER 7 VIBRATIONS OF NONLINEAR
CONSERVATIVE SYSTEMS 303. 8 VIBRATIONS OF A SHAFT ON ELASTIC
BEARINGS WITH A GAP 324. 9 FORCED VIBRATIONS OF A ROTOR ON NONLINEAR
BEARINGS UNDER THE EFFECT OF CIRCULAR DISTURBANCE AND THE WEIGHT FORCE
338. 10 FREE VIBRATIONS OF DISSIPATIVE SYSTEMS 344. 11 NATURAL
VIBRATIONS 349. 12 PARAMETRIC VIBRATIONS 389. BIBLIOGRAPHY 406.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THEORY AND CALCULATION OF VIBRATIONS IN AIRCRAFT ENGINES -U-

AUTHOR--KHRONIN, D.V. K

COUNTRY OF INFO--USSR

SOURCE--TEORIYA I RASCHET KOLEBANIY V DVIGATELYAKH LETATEL'NYKH APPARATOV)
MOSCOW, MASHINOSTROYENIYE, 1970, 411 PP
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, PROPULSION AND FUELS

TOPIC TAGS--SHAFT VIBRATION, BLADE VIBRATION, AIRCRAFT ENGINE, COMPLEX
STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0259

STEP NO--UR/0000/70/000/000/0001/0411

CIRC ACCESSION NO--AM0132516

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0132516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. SYMBOLS 5. INTRODUCTION 7. PART I LINEAR VIBRATIONS CHAPTER 1 SYSTEMS WITH ONE DEGREE OF FREEDOM 11. 2 SYSTEMS WITH MANY DEGREES OF FREEDOM 46. 3 VIBRATIONS OF ROD ELEMENTS WITH A CONTINUOUSLY DISTRIBUTED MASS 86. 4 VIBRATIONS AND CRITICAL VELOCITIES OF ROTATING FLEXIBLE SHAFTS AND ROTORS OF GAS TURBINE ENGINES AND TURBOMACHINES 147. 5 BENDING VIBRATIONS OF CIRCULAR PLATES AND DISKS 217. 6 CALCULATION OF VIBRATIONS OF COMPLEX COMPOSITE SYSTEMS 272. PART II NONLINEAR VIBRATIONS CHAPTER 7 VIBRATIONS OF NONLINEAR CONSERVATIVE SYSTEMS 303. 8 VIBRATIONS OF A SHAFT ON ELASTIC BEARINGS WITH A GAP 324. 9 FORCED VIBRATIONS OF A ROTOR ON NONLINEAR BEARINGS UNDER THE EFFECT OF CIRCULAR DISTURBANCE AND THE WEIGHT FORCE 338. 10 FREE VIBRATIONS OF DISSIPATIVE SYSTEMS 344. 11 NATURAL VIBRATIONS 349. 12 PARAMETRIC VIBRATIONS 399. BIBLIOGRAPHY 406. THE BOOK DEALS WITH BASIC DATA ON THE GENERAL THEORY OF VIBRATIONS OF LINEAR AND NONLINEAR SYSTEMS, THEIR APPLICATION TO CALCULATION OF VIBRATIONS OF PARTS, UNITS AND SYSTEMS OF AIRCRAFT ENGINES. GIVEN ARE CONTEMPORARY METHODS FOR CALCULATION OF VIBRATIONS, WHICH ARE DEVELOPING IN CONNECTION WITH THE USE OF HIGH SPEED COMPUTERS; THE METHOD OF INITIAL PARAMETERS, THE METHOD OF DYNAMIC RIGIDITIES, THE METHODS OF DISCRETE MODELS AND THE INTEGRAL METHOD. THE BOOK REPRESENTS A TEXT BOOK FOR STUDENTS SPECIALIZING IN THE STRENGTH OF AIRCRAFT ENGINES, IT CAN BE USEFUL ALSO TO ENGINEERS OF THE AIRCRAFT INDUSTRY.

UNCLASSIFIED

USSR

UDC 535.375.5+621.373:535].01

BUTYLKIN, V. S., KAPLAN, A. Ye., and KHRONOPULO, YU. G.

"The Self-Influence of Light Due to Forced Raman Scattering"

Leningrad, Optika i Spektroskopiya, Vol XXXI, No 2, Aug 71, pp 224-229

Abstract: It is believed that forced Raman scattering (FRS) is the cause of the self-influence of light. In a previous work the authors discussed the conditions under which FRS may cause self-focusing of light. In this article they examine the dynamics of this type of self-focusing, as well as the dynamics of the self-bending of a beam of light with a Stokes component for the case of nonsymmetric distribution of the field in the pumping beam. They show that self-influence due to FRS is almost always "weak." This means, for example that during self-focusing, the layer in which a large nonlinear addition is made to the magnitude of the dielectric constant may be considered a fine lens.

1/1

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF CONVERSION GAS FOR REMOVAL OF METHANE HOMOLOGS FROM NATURAL
GAS BY HYDROGENATION -U-
AUTHOR-(05)-BERSHTEYN, A.YA., KHRULEV, V.L., MESHENKO, N.T., KOVALENKO,
N.A., VESELOV, V.V. *K*
COUNTRY OF INFO--USSR
SOURCE--NEFT. GAZOV. PROM. 1970, (1), 45-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--METHANE, NATURAL GAS, HYDROGENATION, CARBON MONOXIDE, METAL
CATALYST, NICKEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1967 STEP NO--UR/0513/70/000/001/0045/0046
CIRC ACCESSION NO--AP0133811
UNCLASSIFIED

2/2 015
CIRC ACCESSION NO--AP0133811

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GAS MIXT. CONTG. 74.6PERCENT H
AND 20PERCENT CO, OBTAINED BY CATALYTIC CONVERSION OF NATURAL GAS AT
900DEGREES, WAS USED FOR THE DESTRUCTIVE HYDROGENATION OF CH SUB4
HOMOLOGS IN NATURAL GAS. A MIXT. OF 1 PART OF THE GAS MIXT. AND 3.5-5.6
PARTS NATURAL GAS WAS PASSED OVER A REDUCED NI CATALYST AT 300DEGREES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

1/2 033

TITLE--INTERNAL STRESSES IN LATEX COATINGS -U-

AUTHOR--ROZHKOVA, G.A., KHRULEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (1), 31-2

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, INTERNAL STRESS, BUTADIENE STYRENE RESIN,
CONCRETE, ADHESION, POLYMER CROSSLINKING, FILLER, TENSILE
STRENGTH/(U)SKS65 BUTADIENE STYRENE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1665

STEP NO--UR/0228/70/000/001/0031/0032

CIRC ACCESSION NO--AP0104887

UNCLASSIFIED

272 033

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104887

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF PRELIMINARY VULCANIZATION ON THE STRENGTH OF FILLED BUTADIENE STYRENE SKS-65 RUBBER (I) LATEX, ITS ADHESION TO CONCRETE, AND INTERNAL STRESSES WERE STUDIED. I LATEX WAS FILLED WITH MARSHALITE CONTG. 95.4PERCENT SILICA AND THEN VULCANIZED WITH 3PERCENT OF FINELY DIVIDED S, 1PERCENT, ZNO, AND N(CH SUB2 CH SUB2 OH) SUB3. INTERNAL STRESSES IN I FILMS PASSED THROUGH A MAX., WHEREAS STRESSES IN NONVULCANIZED FILMS APPROACHED THE MAX. ASYMPTOTICALLY. THERE WERE NO STRESSES IN UNFILLED I COATINGS. THUS, INTERNAL STRESSES REACHED THEIR MAX. AT THE VERY ONSET OF CROSSLINKING, AND WERE A FUNCTION OF THE CROSSLINKING KINETICS. AT THE FINAL STAGE OF CROSSLINKING, THE STRESSES WERE CONSIDERABLY SMALLER THAN THE TENSILE STRENGTH OF THE FILMS, THUS ENSURING THE FORMATION OF STRONG ADHESIVE BONDS WITH THE CONCRETE.

UNCLASSIFIED

KHRULEV, V.V.

AA0044234

UR 0482

14

Soviet Inventions Illustrated, Section II Electrical, Derwent.

2/70

243680 CABLE LAYING MACHINE digs trenches for cables along an old cable. A track laying motor vehicle pulls a plough. The coupling between the plough and the towing motor is pneumatic and it is controlled by radio signals. The level and the direction of ploughing are determined by the relative position of the plough to the cable.
23.3.68 as 1228413/29-14. YA.I.MARCHEVSKI et al(3.10.69)
Bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

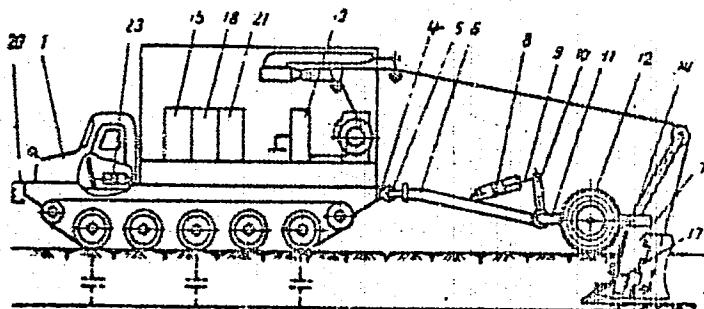
AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I.,
Balaban, A. S., Pil'ganchuk, P. N., Imereli, V. B., Stepanenko,
L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. A.,
Vishnavkov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev,
V. V., Politova, A. Ye., Khayzeruk, Ye. M., Smirnov, V. I.,
Malakhova, V. M.

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UDC 621.391.82:621.396.62:621.376.32:621.317.743

MANUKYAN, S. G., KHRULEVA, N. S., PLATONOV, V. I.

"Statistical Characteristics of Noise from Regular Sources When Receiving an AM Type Signal Superimposed on an FM Carrier"

Uch. zap. Gorkovsk. un-t (Scientific Notes of Gorkiy University), 1970, vyp. 105, pp 31-32 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A107)

Translation: The effect of interfering signals on a receiver in communication systems with an FM-carrier is of the nature of short pulses. This arises from the fact that the heterodyne follows the frequency variation of the useful signal only, and the effects of the interfering signals are exhibited only in the time intervals when the frequency components of the active spectrum of the signal and noise coincide. To determine the distribution law of instantaneous values of the noise at the receiver output, experimental research was performed. By statistical processing of the output voltage oscillograms for two types of modulating voltage (noise vibration in the 250-3,500 hertz frequency band and sinusoidal oscillation with a frequency of two kilohertz), the distribution curves for the instantaneous values of the noise were obtained. For the first type of modulating voltage, the distribution law obtained is close to normal, and for the second type of modulating voltage, the

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MANUKYAN, S. G., et al., Uch. zap. Gorkovsk. un-t (Scientific Notes of Gorkiy University), 1970, vyp. 105, pp 31-32 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A107)

deviation from the normal law is more significant. The greatest variance from normal distribution is observed for values close to zero.

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Acc. No: **A70034402**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 177-181

BLOOD LEVELS OF FREE ISONIAZIDE AND ITS EXCRETION WITH URINE AFTER THE DRUG ADMINISTRATION BY VARIOUS ROUTES IN CHILDREN SUFFERING FROM LUNG TUBERCULOSIS

T. S. Khruleva

Children Lung Clinics of Central Institute for Tuberculosis, Ministry of Public Health of the USSR

Bacteriostatic concentrations of isoniazide in blood and excretion of isoniazide free fraction with urine during twenty-four hours in children at the age of 7 to 14 suffering from active forms of the lung tuberculosis and treated with isoniazide, administered intravenously or orally once a day in a single dose or in divided doses were studied. It was found that intravenous administration provided the highest peaks of the drug blood levels and the greatest amounts of the drug in unchanged form were excreted with urine after its administration by this route, which indicated that in this case the rate of the drug degradation was the least, as compared to other administration routes.

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REEL/FRAME

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19711062

AA0044229

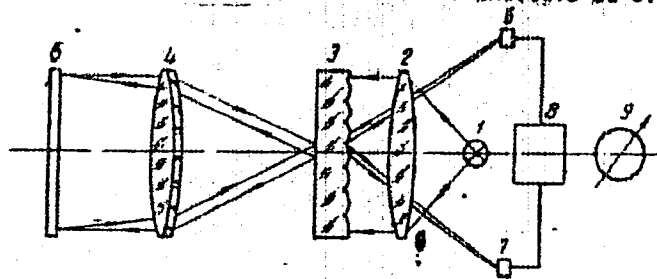
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241743 PHOTOELECTRIC AUTOCOLLIMATOR has two photoelectric receivers (6,7) which are connected to differential amplifier (8) and recorder (9). Optical raster (3) with cylindrical elements is arranged to have the same focal plane as an objective (4) so that the amplitude and the sign of a signal on recorder (9) will be proportional to the difference of the signals from the photoelectric receivers and will indicate the direction and amount of any deflection of mirror (5).

1/70

29.2.68 as 1222967/18-10, G.S. KHRULKOV & V.A. BARANOV (9.9.69) Bul 14/18.4.69. Class 42h. Int. Cl. G 02 b.



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19770724

USSR

UDC 621.791.793

VOLOSHKEVICH, G. Z., SUSHCHUK-SLYUSARENKO, I. I., LYCHKO, I. I., KHRUNDZHE,
N. M., Institute of Electric Welding im. Ye. O. Paton AN UkrSSR

"Some Means for Improvement of Electroslag Welding"

Kiev, Avtomaticheskaya Svarka, No 12, 1972, pp 5-9

Abstract: Characteristics of the electroslag welding method are discussed. The prospects for future development of the electroslag welding method are noted. The method is particularly promising for welding of extremely thick metal structures, although the welding rate is generally rather low for thick structures (less than 1 m/hr). Areas for further research are suggested, including: investigation of the properties of the seam zone in steels welded by the method; creation of new types of steels not requiring high-temperature heat treatment after electroslag welding; search for technological means of improving the structure of the seam zone after welding and tempering; development of means for improvement of the mechanical properties of seam metal after welding and tempering by changing the chemical composition; creation of effective methods of local and surface high-temperature heat treatment; development of measures for conservation of the shape of products with general high-temperature heat treatment; improvement of impact testing methods; and
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USSR

VOLOSHKEVICH, G. Z., et al., *Avtomaticheskaya Svarka*, No 12, 1972, pp 5-9

determination of the necessary areas for the application of high-temperature heat treatment by classification of products as to composition, usage temperature, nature of loading, presence of stress concentrators, etc.

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1/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--POSSIBLE INCREASE IN THE CONTACT DURABILITY OF DRILLING STEEL
20KH3A BY ADDING SURFACE ACTIVE AGENTS TO THE CLAY WASHING MORTAR -U-
AUTHOR--(05)-KATSOV, K.B., KUSLITSKIY, A.B., KHRUNIK, R.A., ZHIDOVTSSEV,
N.A., GILMAN, K.M.
COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 6(1), 102-3

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--ALLOY DESIGNATION, SURFACE ACTIVE AGENT, LOW ALLOY STEEL, WELL
DRILLING MACHINERY, EXPLORATORY DRILLING, CLAY/(U)20KH3A LOW ALLOY
STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0327

STEP NO--UR/0369/70/006/001/0102/0103

CIRC ACCESSION NO--AP0126083

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0126083

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT ON APP. AND WITH THE METHOD AS DESCRIBED BY K. B. K. (1968). THE CLAY SUSPENSION HAD SMALLER THAN OR EQUAL TO 1PERCENT SAND, PH EQUALS 7.5, AND SP. GR. 1.16. SPECIMENS DIAM. 10 MM FROM STEEL 20KHNB1 AFTER CONVENTIONAL HEAT TREATMENT (AS USED FOR OIL DRILLS) HAD HARDNESS OF SURFACE LAYER HRC 59-60. THE FOLLOWING 4 SURFACE ACTIVE MIXTS. WERE INTRODUCED AT 2PERCENT INTO THE CLAY WASHING MORTAR: (IN PARENTHESES ARE GIVEN NO. OF MILLIONS OF CYCLES UNTIL THE APPEARANCE OF PITTING CORROSION ON THE SURFACE): CLAY WASHING MORTAR ALONE (1.14), SAME PLUS 2PERCENT OXIDIZED PETROLATUM WITH ACID NO. 20 MG OF KOH (1.95), SAME PLUS 2PERCENT PETROLUEN ASPHALT WITH ACID NO. 60 MG KOH (NO PITTING AFTER 10), SAME PLUS 2PERCENT ESTERIFIED PETROLEUM ASPHALT WITH ACID NO. 15 MG KOH (NO PITTING AFTER 10), TAP WATER AS A CONTROL (0.93), MACHINE OIL AS CONTROL (11.8). THE ADDN. OF THE PETROLEUM ASPHALT ALONE OR ESTERIFIED CAN IMPROVE CONSIDERABLY THE WORK OF OIL DRILLS. FACILITY: FIZ.-MEKH. INST., LVOV, USSR.

UNCLASSIFIED

1/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--INFLUENCE OF THE MOLYBDENUM DISULFIDE BASED LUBRICANTS ON THE
HYDROEXTRUSION PROCESS OF THE SHKH15 STEEL -U-

AUTHOR--(04)--KARPENKO, I.V., KATSOV, K.B., OGNETOVA, ZH.N., KHRUNIK, R.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
115, 116

DATE PUBLISHED--70

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

TOPIC TAGS--HYDROSTATIC EXTRUSION, METAL LUBRICANT, MOLYBDENUM DISULFIDE,
BALL BEARING STEEL, BIBLIOGRAPHY/(U)SHKH15 BALL BEARING STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0072

STEP NO--UR/0369/70/006/002/0115/0116

CIRC ACCESSION NO--AP0125907

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE HYDROEXTRUSION
PROCESS OF SHKH15 STEEL AT DIFFERENT REDUCTIONS AND USING DIFFERENT
LUBRICANTS. THE USEFULNESS OF LUBRICANTS BASED ON MOLYBDENUM DISULFIDE
AND PHENOL FORMALDEHYDE RESIN FOR HYDROEXTRUSION PURPOSES IS
DEMONSTRATED. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR,
FIZIKO-TEKHNICHESKII INSTITUT, DONETSK. FACILITY: AKADEMIIA
NAUK UKRAINSKOI SSR, FIZIKO-MEKANICHESKII INSTITUT, LVOV, UKRAINIAN
SSR.

UNCLASSIFIED

1/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70/

TITLE--ANALYSIS OF THE RESULTS OF SPECTRAL STUDIES OF THE TWILIGHT AUREOLE
OF THE EARTH'S ATMOSPHERE FROM THE SOYUZ 5 SPACECRAFT -U-
AUTHOR--(05)-VOLYNOV, B.V., KONDRATYEV, K.YA., GALTSEV, A.P., SMORTYI,
D.I., KHRUNOV, YE.V.
COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIYA, FIZIKA ATMOSFERY I OKEANA, VOL. 6,
APR. 1970, P. 388-411
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--SPECTRUM, TWILIGHT, SPECTROPHOTOMETRIC ANALYSIS, SPACEBORNE
ATMOSPHERIC OBSERVATION/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0425

STEP NO--UR/0362/70/006/000/0386/0411

CIRC ACCESSION NO--AP0129650

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--13NOV70

ZIRC ACCESSION NO--AP0129650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY OF THE RESULTS OF SPECTROPHOTOMETRIC MEASUREMENTS OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE AS FIRST PERFORMED FROM THE SOYUZ 5 SPACECRAFT. AN ANALYSIS IS MADE OF THE EXPERIMENTAL DATA THUS OBTAINED AS A FUNCTION OF WAVELENGTH, PERIGEE HEIGHT OF THE LINE OF SIGHT ABOVE THE EARTH'S SURFACE, ANGLE OF DEPRESSION OF THE SUN, AND OTHER PARAMETERS. THE VERTICAL PROFILES OF THE MONOCHROMATIC BRIGHTNESS OF THE TWILIGHT AUREOLE ARE COMPARED WITH THE RESULTS OF CORRESPONDING THEORETICAL CALCULATIONS FOR ELTERMAN'S (1968) AEROSOL MODEL. COLOR DIAGRAMS AND COLOR PICTURES OF THE TWILIGHT AUREOLE ARE CONSTRUCTED USING THEORETICAL BRIGHTNESS VALUES FOR VARIOUS MODELS OF THE EARTH'S ATMOSPHERE, AND ALSO USING EXPERIMENTAL DATA AND THE RESULTS OF VISUAL OBSERVATIONS CARRIED OUT FROM THE SOYUZ 5 SPACECRAFT. FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

UNCLASSIFIED

1/3 036 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ANALYSIS OF THE RESULTS OF SPECTRAL INVESTIGATIONS OF THE TWILIGHT
AUREOLE IN THE EARTH'S ATMOSPHERE FROM THE SOYUZ 5 SPACESHIP, SPECTRAL
AUTHOR--(05)--KONDRATYEV, K.YA., VULYNOV, B.V., GALTSEV, A.P., SMOKTIY,
O.I., KHRUNOV, YE.V.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, STATE UNIVERKITY; MOSCOW, IZVESTIYA AKADEMII NAUK SSSR,
FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 4, 1970, PP 388-411
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--TWILIGHT, SPACEBORNE ATMOSPHERIC OBSERVATION,
SPECTROPHOTOMETRIC ANALYSIS, ATMOSPHERE/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0366

STEP NO--UR/0362/70/006/004/0388/0411

CIRC ACCESSION NO--AP0114658

UNCLASSIFIED

2/3 . 036

UNCLASSIFIED

PROCESSING DATE--09DCT70

CIRC ACCESSION NO--AP0114658

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER PRESENTS THE RESULTS OF SPECTROPHOTOMETRIC INVESTIGATION OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE, MADE FOR THE FIRST TIME FROM THE "SOYUZ-5" SPACESHIP. THE AUTHORS ANALYZE THE COLLECTED EXPERIMENTAL DATA AS A FUNCTION OF WAVELENGTH, PERIGEE ALTITUDE OF THE LINE OF SIGHT ABOVE THE EARTH'S SURFACE, ANGLE OF SOLAR DEPRESSION AND OTHER PARAMETERS. THIS IS FOLLOWED BY A COMPARISON OF THE VERTICAL PROFILES OF MONOCHROMATIC BRIGHTNESS OF THE TWILIGHT AUREOLE WITH THE RESULTS OF CORRESPONDING THEORETICAL COMPUTATIONS FOR THE L. ELTERMAN AEROSOL MODEL (1968). COLOR DIAGRAMS WERE CONSTRUCTED FOR THE TWILIGHT AUREOLE USING THE THEORETICAL BRIGHTNESS VALUES FOR DIFFERENT MODELS OF THE EARTH'S ATMOSPHERE AND EXPERIMENTAL DATA AND THE RESULTS OF VISUAL OBSERVATIONS MADE FROM THE "SOYUZ-5". THE PAPER HAS THE FOLLOWING BASIC SECTIONS: 1) OPTICAL CHARACTERISTICS OF THE MANUAL SPECTROGRAPH AND METHOD FOR PROCESSING SPECTROGRAMS; 2) BASIC RESULTS OF VISUAL OBSERVATIONS AND SPECTROPHOTOMETRIC STUDY OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE; 3) THEORETICAL MODEL OF THE FIELD OF SPECTRAL BRIGHTNESS OF THE TWILIGHT AUREOLE IN THE EARTH'S ATMOSPHERE; 4) MOLECULAR ATMOSPHERE; 5) MOLECULAR ATMOSPHERE IN PRESENCE OF AEROSOL PARTICLES; 6) MOLECULAR ATMOSPHERE IN THE PRESENCE OF AEROSOL PARTICLES AND OZONE; 7) COMPARATIVE ANALYSIS OF COMPUTED AND EXPERIMENTAL DATA FROM SPECTROPHOTOMETRIC STUDY OF THE TWILIGHT AUREOLE. MOST IMPORTANTLY, THE STUDY REVEALED THAT IT IS POSSIBLE TO OBTAIN RELIABLE VERTICAL PROFILES OF THE AEROSOL SCATTERING COEFFICIENT FROM SPACESHIPS.

UNCLASSIFIED

3/3 036 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0114658
ABSTRACT/EXTRACT--THE METHOD IS EFFECTIVE IN ANALYZING THE VERTICAL
DISTRIBUTION OF OPTICALLY IMPORTANT ATMOSPHERIC COMPONENTS.

89

UNCLASSIFIED

1/2 047 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TWILIGHT COLORIMETRY FROM HORIZON SPECTRA OBTAINED ON BOARD THE
SOYUZ 5 SPACECRAFT -U-
AUTHOR-(04)-KONDRATYEV, K.YA., GALTSEV, A.P., SMOKTLY, D.I., KHRUNOV,
YE.V.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 11, 1970, P.
1044-1047
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--TWILIGHT, COLORIMETRY, ATMOSPHERIC MODEL, SPACEBORNE
ATMOSPHERIC OBSERVATION/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0867

STEP NO--UR/0020/70/191/000/1044/1047

CIRC ACCESSION NO--AT0129936

UNCLASSIFIED

2/2 047

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCULATION OF THE COLORIMETRIC CHARACTERISTICS OF THE TWILIGHT AUREOLE FOR SEVERAL MODELS OF THE VERTICAL STRUCTURE OF THE ATMOSPHERE AND THE OBSERVATION CONDITIONS ON BOARD SOYUZ 5. THE CHROMATICITY COEFFICIENTS (X, Y, Z) OF THE TWILIGHT AUREOLE ARE COMPUTED FOR A PURELY SCATTERING MOLECULAR ATMOSPHERE WITH AND WITHOUT THE PRESENCE OF NONABSORBING AEROSOL PARTICLES AND OZONE. THE RESULTS ARE GIVEN IN GRAPHICAL FORM.

UNCLASSIFIED

KHRUNOV Ye. V.

Acc. Nr.: AT0045335

Ref. Code: HR0030
JPRS 50052

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Visual and Instrumental Observations of Twilight Aureole

(Abstract: "Some Results of Visual Observations and Spectrophotometric Measurements of the Twilight Aureole of the Earth's Atmosphere from the 'Soyuz-5' Spaceship," by K. Ya. Kondrat'yev, Corresponding Member, Academy of Sciences USSR, B. V. Volynov, A. P. Gal'tsey, V. V. Kol'chov, O. I. Smoktiy and Ye. V. Khrunov; Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp. 327-330)

The program for "Soyuz-5" included an optical experiment in space for studying the spectral (color), angular and spatial evolution of the brightness picture of the twilight atmosphere. This program included simultaneous photographic and spectrophotometric studies of the twilight aureole of the earth's atmosphere in the wavelength range 400-650 mμ, accompanied by visual observations. The program for working with the manual spectrograph provided for a survey of the twilight aureole of the earth's atmosphere in the direction of the sun from the time of appearance of the aureole until the total emergence of the spaceship on the illuminated side of the earth. The twilight aureole was also photographed on black-and-white and color film. Visual observations included an evalua-

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tion of the vertical evolution of brightness and color of the twilight aureole as the sun emerged from below the horizon. Some of the results can be summarized as follows. Near the earth's surface the principal contribution to brightness of the twilight aureole is from long-wave radiation. With an increase in the altitude of the sighted layer atmospheric density decreases and the brightness of the twilight aureole is at a wavelength of $\sim 480 \text{ m}\mu$. A brightness minimum is observed at a wavelength of $\sim 600 \text{ m}\mu$, caused by ozone absorption in the Chappuis band. The depth of this minimum is dependent on the altitude of the particular layer of the atmosphere above the earth's surface. Spectral brightness is greatly dependent on the azimuth of the direction of sighting and the angle of solar depression, sharply increasing with a decrease of the latter. The altitude corresponding to the spectral brightness maximum is also dependent on the angle of solar depression and wavelength, decreasing with an increase of the latter.

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1/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VISUAL ESTIMATES OF THE COLOR OF THE TWILIGHT SKY ACCORDING TO
OBSERVATIONS FROM THE SOYUZ 5 SPACECRAFT --U--
AUTHOR--(04)--KONDRATYEV, K.YA., GALTSEV, A.P., SMOKTIY, O.I., KHRUNOV,
YE.V.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 1, 1970, P. 824, 825
DATE PUBLISHED--01APR70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, METHODS AND EQUIPMENT, SPACE
TECHNOLOGY
TOPIC TAGS--TWILIGHT, COLOR PHOTOGRAPHY/(U)SOYUZ 5 MANNED SPACECRAFT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1084 STEP NO--UR/0020/70/191/000/0824/0825
CIRC ACCESSION NO--AT0124741
UNCLASSIFIED

Z/2 042

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY OF VISUAL OBSERVATIONS OF THE TWILIGHT AUREOLE FROM THE SOYUZ 5 SPACECRAFT ON JAN. 15 AND 16, 1969. THE CHANGES IN THE APPEARANCE OF THE TWILIGHT AUREOLE UNDER CLOUDLESS CONDITIONS AND IN THE PRESENCE OF SOLID AND BROKEN CLOUDLINESS ARE REVIEWED. CERTAIN DIFFERENCES NOTED IN THE COLOR PICTURE THUS OBTAINED AS COMPARED WITH THE FIRST HAND FINDINGS OF ASTRONAUTS ARE CITED. FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE EFFECT OF SUKHUMI MINERAL WATERS, BUROVAYA I AND BUROVAYA II,
ON REACTIVITY OF THE ORGANISM IN PATIENTS WITH DIFFERENT DERMATOSES -U-
AUTHOR--(02)-KHRUNOVA, A.P., MGBRISHVILI, O.M.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 6, PP 31-34
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SKIN DISEASE, MINERAL, WATER, SULFIDE, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3005/1347 STEP NO--UR/0206/70/000/006/0031/0034
CIRC-ACCESSION NO--AP0133202
UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133302
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMAL MINERAL SULFID CHLORIDE
SODIUM POTASSIUM WATERS OF SUKHUMI SPRINGS BUROVAYA I AND BUROVAYA II
WERE FIRST USED FOR TREATMENT OF 40 PATIENTS WITH ECZEMA, 20 PATIENTS
WITH NEURODERMATITIS AND 40 PATIENTS WITH PSORIASIS. REACTIVITY OF THE
ORGANISM WAS STUDIED DYNAMICALLY BEFORE AND AFTER A COURSE OF COMPLEX
CLIMATO BALNEOTHERAPY BY METHODS OF THERMOREGULATION REFLEX,
ORTHOCLINOSTATIC TEST, CAPILLAROSCOPY AND SENSORY CHRONAXY. IT WAS
FOUND THAT DESPITE A POSITIVE THERAPEUTIC EFFECT THE FUNCTIONAL
DISORDERS OF THE NERVOUS SYSTEM JUDGED BY THE VASCULAR VEGETATIVE
DETERMINATIONS PERSISTED IN 40PERCENT OF THE PATIENTS. FOR
STRENGTHENING THE CLINICAL RESULTS IT WOULD BE EXPEDIENT FOR THE
PATIENTS TO STAY FOR A LONG PERIOD AFTER A COURSE OF CLIMATO
BALNEOTHERAPY IN THE CLIMATIC ZONE OF SUKHUMI OR TO VISIT THE SPA ONCE
MORE. FACILITY: OTDEL PATOFIZIOLOGII TSENTRAL'NOGO
NAUCHNO-ISSLED. KOZHNO-VENEROLOGICHESKOGO INSTITUTA MZ SSSR I
RESPUBLIKANSKIY KOZHNO-VENEROLOGICHESKIY DISPANSER MZ ABKHAZSKOY ASSR.

UNCLASSIFIED

Acc. Nr: AP0047334

Ref. Code: UR0206

PRIMARY SOURCE: Vestnik Dermatologii i Venerologii, 1970,

Nr 1, pp 2730/

K

THE IMPORTANCE OF ELECTROENCEPHALOGRAPHY AS AN INDICATION FOR
PROPER SELECTION OF PATIENTS WITH ITCHING DERMATOSES FOR SONICA-
TION TREATMENT

N. S. Smelov, A. P. Khranová, A. S. Bezzabotnov, V. S. Angelova, V. I. Makovoz

Summary

Clinico-laboratory observations demonstrated the efficacy of sonication in treat-
ment of patients with itching dermatoses. Detection of an inhibition process according
to EEG is a contraindication to sonication treatment. This permits to recommend elec-
troencephalographic examination to be used for proper selection of patients for treatment.

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UDC 617-001.34-085.273.53

DEMIN, A. A., KHRUPINA, A. Ya., and VASILENKO, G. P., Novosibirsk Medical Institute

"Heparin Treatment of Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 10, 1971, pp 16-20

Abstract: Following the observation of hypercoagulation and deficiency of free blood heparin in 155 patients with vibration sickness, the authors decided to treat 50 of them with heparin: 44 by electrophoresis in the wrists (12 to 15 procedures, 10 to 20,000 units), 3 by intravenous injection (10,000 units daily), and 3 by subcutaneous injection (5000 units 2 to 4 times daily, 5000 units each time). Forty-three patients showed marked improvement. Paresthesia and numbness disappeared after 3 or 4 procedures, pain in the wrists and stiffness in the joints diminished while muscular strength increased after 5 or 6 procedures. Pain and paresthesia ceased completely, cyanosis, headaches, and wrist weakness diminished after the conclusion of the course of treatments. Pallesthesimetry, dynamometry, oscillography, capillaroscopy, etc., produced objective evidence of the efficacy of heparin.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MECHANISM OF THE CATALYTIC ACTION OF A MOLYBDENUM TIN CHLORIDE
SYSTEM -U-
AUTHOR--KHRUSHCH, A.P., SHILOV, A.E. *R*
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 86-90
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ETHANE, DEUTERIUM COMPOUND, MOLYBDENUM, TIN CHLORIDE, CATALYST
ACTIVITY, CATALYTIC HYDROGENATION, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0198 STEP NO--UR/0195/70/011/001/0086/0090
CIRC ACCESSION NO--AP0106854
UNCLASSIFIED

272 025 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0106854
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MONO AND DIDEUTERIOETHANE ARE THE
MAIN PRODUCTS IN THE INITIAL STAGE OF C SUB2 H SUB4 DEUTERATION IN THE
PRESENCE OF HOMOGENEOUS CATALYTIC MIXT. OF MOCL SUB5-SNCL SUB2 IN
TETRAHYDROFURAN. CATALYTIC HYDROGENATION OF C SUB2 H SUB4 IS A 1ST
ORDER REACTION WITH RESPECT TO MO, C SUB2 H SUB2, AND H CONCN. AND ITS
ACTIVATION ENERGY IS 18 KCAL-MOLE. HYDROGENATION ON MOCL SUB5-SNCL SUB2
CATALYST INVOLVES INSERTION OF C SUB2 H SUB4 INTO MO-H BOND AND A
SUBSEQUENT HYDRATION OF THE THUS FORMED ET-MO TO C SUB6 H SUB6.

UNCLASSIFIED

USSR

UDC 541.49:546.73 + 541.31

D. YACHKOVSKIY, F. S., KHRUSHCH, N. YE., SHILOV, A. YE., Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Reaction of Methyl(tris)triphenylphosphine Cobalt With Unsaturated Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1726-1730

Abstract: At room temperature the toluene solution of $\text{CH}_3\text{Co}(\text{PPh}_3)_3$ (I) gradually changes its color from orange to brown, producing methane, ethane, toluene, benzene, and some PPh_3 in the reaction vessel. At -120°C such solutions are relatively stable. When (I) is reacted with a series of olefines and organic bases, a rapid color change takes place with liberation of gases, their quantity depending on the olefine used. In general, it is shown that the reaction of (I) with unsaturated compounds results in an interaction of the cobalt methyl group with the olefines in the coordination sphere of the metal without intermediary formation of free radicals. When hexene and divinyl are reacted with (I), η -allyl derivatives
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USSR

D. YACHROVSKIY, F. S., et al, Zhurnal Obshchey Khimii, Vol 40,
No 8, Aug 70, pp 1726-1730

of cobalt are formed. The reaction rate of organic and unsaturated compounds with (I) increases with an increased trend in the transition $d_{\pi} \rightarrow p_{\pi}$ from metal to the olefine.

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USSR

UDC: 621.373.544(088.8)

KHRUSHCHEV, A. P., BRITKOV, N. A.

"A Flip-Flop Based on Transistors With Controlled Hysteresis"

USSR Author's Certificate No 259142, filed 29 Jul 68, published 5 Jan 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G255 P)

Translation: This Author's Certificate introduces a transistorized flip-flop with controllable hysteresis. The device contains a circuit for setting the flip-flop in the initial state, a divider for regulating the amplitude of hysteresis connected to the collector of one of the transistors, and trigger circuits with a semiconductor block diode connected in one of them. To improve resistance to interference in triggering the flip-flop, the collector of the other transistor is connected through a semiconductor diode and a resistor to the common point of a circuit comprised of a resistor and capacitor connected in series to the supply circuit, the semiconductor blocking diode also being connected to the common point of the above-mentioned circuit through a resistor.

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- 44 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70
IN MOLTEN TIN -U-

TITLE--SCATTERING CROSS SECTIONS OF SLOW NEUTRONS

AUTHOR--(02)-KHRUSHCHEV, B.I., SHARIPOVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 188-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SCATTERING CROSS SECTION, SLOW NEUTRON, LIQUID METAL PROPERTY,
TIN, NEUTRON ENERGY DISTRIBUTION, ORDERED ALLOY, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1243

STEP NO--UR/0126/70/029/001/0188/0189

CIRC ACCESSION NO--AP0115260

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115260

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCATTERING CROSS SECTION OF SLOW NEUTRONS WERE DETD. AS A FUNCTION OF NEUTRON WAVELENGTH FROM 3.5 TO 7.5 ANGSTROM FOR CRYST. SN AT 20 AND 225DEGREES AND LIQ. SN AT 235 TO 1250DEGREES. AT 235DEGREES, A MAX. IN THE CURVE AND THE RADIUS (R SUB1 EQUALS 3.2-3.4 ANGSTROM) AND COORDINATION NO. (N SUB1 EQUALS 8-11.5) OF THE 1ST COORDINATION SPHERE ARE CONSISTENT WITH 2 KINDS OF SHORT RANGE ORDER, THAT OF WHITE SN (15PERCENT) AND OF AN ORTHORHOMBIC FACE CENTERED STRUCTURE (85PERCENT). FROM 430DEGREES (R SUB1 EQUALS 3.3, N SUB1 EQUALS 7.5-8.5) TO 650DEGREES, THE SHORT RANGE ORDER IS A MIXT. OF THAT OF WHITE SN AND OF A DISTORTED BCC. STRUCTURE. THIS SHIFTED FURTHER TOWARDS BCC. STRUCTURE BY 1050DEGREES, AND ADDNL. STRUCTURAL CHANGES WERE OBSD. AT 1250DEGREES. FACILITY: INST. YAD. FIZ., MUSCOW, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CHANGE IN THE STRUCTURE OF LEAD DURING MELTING -U-
AUTHOR--(02)--KHRLSHCHEV, B.I., SHARIPOVA, L.S. *K*
COUNTRY OF INFO--USSR
SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 134-6
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--LEAD, CRYSTALLOGRAPHY, METAL MELTING, NEUTRON DIFFRACTION,
MONOCHROMATOR, SCATTERING CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0919 STEP NO--UR/0192/70/011/001/0134/0136
CIRC ACCESSION NO--AP0116429
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEUTRON DIFFRACTOMETER WITH A TRAVELING MONOCHROMATOR WAS USED IN MEASURING THE TOTAL SCATTERING CROSS SECTIONS, $\Sigma(\lambda)$, OF CRYST. PB (AT ROOM TEMP. AND AT 320DEGREES) AND LIQ. PB (AT 330DEGREES) IN THE WAVELENGTH INTERVAL 3.2-7.5 ANGSTROM. IT WAS ASSUMED THAT ELASTIC SCATTERING WAS DETD. AND THAT LIQ. PB IS MONAT. AND THERE IS SHORT RANGE ORDER IN 2 DIFFERENT STRUCTURES (FCC. AND BCC.); ON THIS BASIS A QUASICRYST. MODEL WAS ESTABLISHED, AND THE POSITIONS OF THE MAX., $\Sigma(\lambda)$, WERE CALCD. FOR VARIOUS CRYSTALLOGRAPHIC LATTICES HAVING DIFFERENT PARAMETERS. THE CALCN. WAS MADE FOR A MIXED LIQ. STRUCTURE: 50PERCENT BCC. AND 50PERCENT FCC. THE AGREEMENT BETWEEN THE EXPTL. AND THEORETICAL CURVES SUGGESTS THAT THE 2 CRYST. STRUCTURES EXIST SIMULTANEOUSLY IN DIFFERENT REGIONS WITHIN LIQ. PB. IN FACT, THE RESTRUCTURING TO THE BCC. FROM THE FCC. FORM BEGINS AT A TEMP. A FEW DEGREES BELOW THE M.P. FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THERMODYNAMIC ANALYSIS OF SOME METAL OXYGEN CARBON SYSTEMS -U-
AUTHOR--(03)-RYABCHIKOV, I.V., KHRUSHCHEV, M.S., PAPIN, G.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 20-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--ZIRCONIUM COMPOUND, THORIUM COMPOUND, THERMODYNAMIC ANALYSIS,
OXYGEN, CARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/1032 STEP NO--UR/0148/70/013/002/0020/0023
CIRC ACCESSION NO--AF0121628
UNCLASSIFIED

2/2 024

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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0121628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD FOR THE THERMODYNAMIC ANAL. OF A 3 COMPONENT SYSTEM M,B,C WAS DEVELOPED AND APPLIED TO SYSTEMS IN WHICH M EQUALS ZR AND TH. THE REGIONS AT WHICH CONDENSED PHASES EXIST AT DIFFERENT TEMP. AND GAS COMPN. WERE DETD. FROM DIAGRAMS LOG P SUBMO-P SUBCO AND LOG (P SUBMO PLUS P SUBCO) VS. 1-T. FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

USSR

UDC 632.954:631.427.22

KHRUSHCHEVA, YE. P., Gor'kiy Agricultural Institute

"Effect of Simazine on the Development of Corn Mycorrhiza"

Moscow, Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 52-53

Abstract: A study was made of the development of corn mycorrhiza in the presence of various types of soil and various doses of herbicide. In the amount of 4 kg/hectare, simazine applied during the initial vegetation period of corn suppresses the development of mycorrhiza in light gray forest soil. In the amount of 2 kg/hectare the herbicide attenuates the mycorrhiza formation only in the crownroots. In the second half of the vegetative stage of corn, the formation of mycorrhiza is intensified under the effect of simazine for both doses. In degraded chernozem, simazine stimulates the formation of mycorrhiza in corn roots throughout the entire vegetative stage.

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UDC: 539.621

ISTOMIN, N. P., and KHRUSHCHOV, M. M., Moscow

"Effect of Graphite Cleavage Plane Orientation on Friction and Wear of its Mixture With Ftoroplast-4"

Moscow, Mashinovedeniye, No 1, Jan-Feb 73, pp 90-94

Abstract: Ftoroplast-4 (Teflon) has a low coefficient of dry friction, but has poor wear resistance. The wear resistance is considerably improved by introduction of powder fillers including graphite. Graphite powder has a laminated structure. When subject to compression the cleavage planes of graphite powder orient themselves normal to the direction of compression. Bearings were prepared by mixing teflon with 30% in volume of graphite powder, compressing the mixture in a mold and baking it under pressure. Tests showed that the lowest wear is obtained with the cleavage planes normal to the direction of sliding. An even better wear resistance was obtained with cryptocristalline graphite.

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USSR

UDC 621:669.018.25.620.178.16

KHRUSHCHOV, M. M., BABICHEV, M. A., BERKOVICH, YE. C., KOZYREV, S. P.,
KRAPOSHINA, L. B., PRUZHANSKIY, L. YU.

Izmosostoykost' i struktura tverdykh naplavok (Wear Resistance and Structure of Hard Surfacing), Moscow, Mashinostroyeniye Press, 1971, 95 pp

Translation of **Foreward**: Application of hard wear-resistant surfacing to face the working surfaces of machine parts is one of the very efficient methods of increasing the service life of the parts. The problems of expedient selection of the surfacing materials as a function of the operating conditions of the parts, just as the problems of the technological methods of surfacing, have not been sufficiently clarified. Many surfacing alloys are known, and it is of practical interest to compare their properties under identical test conditions, in particular when testing for abrasive wear.

The book contains discussions of the results of laboratory testing of surfacing materials for abrasive wear, impact bending strength, hardness, and microhardness of the structural components. The results of a study of the microstructure are also presented. These studies were performed by the authors of the book at the Wear Resistance Laboratory of the State Scientific Research Institute of Mechanical Engineering.

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USSR

KHRUSHCHOV, M. M., et al., Iznosostoykost' i struktura tverdykh naplavok, Moscow, Mashinostroyeniye Press, 1971, 95 pp

The last chapter contains a discussion of the research data of a number of Soviet authors on the operational and laboratory comparative tests for abrasive wear of different surfacing materials applied to parts with different operating conditions.

The book is a reference manual for the properties of various surfacing materials during abrasive wear.

The abrasive wear tests on the Kh4-B machine were performed by M. A. Babichev, on the NK machine by Ye. S. Berkovich, for hydroabrasive wear by S. P. Kozyrev, and for impact toughness by L. Yu. Pruzhanskiy. A microstructural study and a microhardness test were performed by L. B. Kraposhina. The work was coordinated by M. M. Khrushchov.

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USSR

KHRUSHCHOV, M. M., et al., Iznosostoykost' i struktura tverdykh naplavok,
Moscow, Mashinostroyeniye Press, 1971, 95 pp

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USSR

KHRUSHCHOV, H. M., et al., Izносостовkost' i struktura tverdykh naplavok,
Moscow, Mashinostroyeniye Press, 1971, 95 pp

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1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMBINED TREATMENT OF CANCER OF THE RECTUM -U-
AUTHOR--(04)-PAVLOV, A.S., SIMAKINA, E.P., KHRUSCHOV, M.M., SMIRNOVA, E.S.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 5, PP 67-74
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CANCER, COLON, SURGERY, RADIOTHERAPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0134 STEP NO--UR/0531/70/000/005/0067/0074
CIRC ACCESSION NO--AP0129390
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129390

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS CONCERNED WITH THE COMBINED TREATMENT OF CANCER OF THE RECTUM IN PRIMARY ESTABLISHED INOPERABILITY AND IN OPERABLE PATIENTS ARE DISCUSSED. ON THE BASIS OF 85 OBSERVATIONS THE AUTHORS EMPHASIZE THE PRINCIPAL DIFFERENCE OF METHODOLOGICAL APPROACHES IN THE TREATMENT OF THESE TWO GROUPS OF PATIENTS. BASING UPON AN ANALYSIS OF OPERATIVE COMPLICATIONS, CHARACTER OF THE COURSE OF THE POSTOPERATIVE PERIOD, MACRO AND MICRO MORPHOLOGICAL CHANGES OF THE PREPARATIONS REMOVED, IT IS UNDERLINED THAT CONDITIONS OF BETTER (SIMILARITY) OF OPERATIONS AND IRRADIATION IN OPERABLE RECTAL CANCER ARE ASSOCIATED WITH THE TECHNIQUE OF IRRADIATION. PREFERENCE IS GIVEN TO DAILY IRRADIATION (500 RAD) FOR A PERIOD OF FOUR DAYS AND SUBSEQUENT OPERATION ON THE 4TH-6TH DAY AFTER THE END OF IRRADIATION.

FACILITY: NI ONKOLOGICHESKIY INSTITUTA IM. P. A. GERTSENA I
KAFEDRA KLINICHESKOY PATILOGII TSIU.

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USSR

UDC 669.715'782:620.186

KUZNETSOV, G. M., ROTENBERG, V. A., GERSHMAN, G. B., KHRUSHCHOVA, K. M., and ZIL'BERG, Yu. Ya., State Union Scientific Research Tractor Institute; Moscow Institute of Steel and Alloys

"Methods and Theories of the Modification of Hypereutectic Silumins"

V sb. Modifitsir. siluminov (Modification of Silumins -- Collection of Works), Kiev, 1970, pp 5-19 (from RZh-Metallurgiya, No. 12, Dec 70, Abstract No 12 1746 by I. NABATOVA)

Translation: The authors consider in detail substances creating the effect of modification of hypereutectic Silumins and methods of introducing them. Modifiers of primary Si are P, copper phosphide (eutectic), reaction mixtures "alposite," "phoral," a mixture of 52% Li_3PO_4 + 40% Al + 8% P, a mixture of Al_3PO_4 + $\text{Mg}_2\text{P}_2\text{O}_7$ + ethane C_2Cl_6 + copper phosphide, polytetrafluoroethylene + P + AlP; Be, Cu, Ag, Zn, Cd, Hg, Se, Te, Ca, Cd, Ge, Ti, S, F, and Na, as well as a mixture of eutectic Silumin with Al shavings in combination with Na, break up the Si and the eutectic simultaneously. The following hypothesis explaining the modification mechanism are discussed: 1) formation of nuclei of the AlP type; 2) connection with Al-Si-modifying-element phase diagrams;

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1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--FUNCTIONAL CHANGES OF THE PANCREAS IN PATIENTS WITH GASTRODUODENAL
PEPTIC ULCER -U-
AUTHOR--(04)-SAVELYEV, V.S., UMBRUMYANTS, A.A., KHRUSHCHOVA, V.M.,
PROKOPYEVA, ZH.F.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 4, PP 55-59
DATE PUBLISHED-----70

K

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, PANCREAS, TRYPSIN, BLOOD SERUM,
INHIBITION, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1237

STEP NO--UR/0531/70/000/004/0055/0059

CIRC ACCESSION NO--AP0054132

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054132

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FUNCTIONAL STATE OF THE PANCREAS WAS STUDIED IN PATIENTS WITH GASTRODUODENAL ULCER. THE CHARACTER OF CHANGES WAS ASSESSED BY THE LEVEL OF TRYPSIN AND ITS INHIBITOR IN THE BLOOD SERUM IN 67 PATIENTS, IN 33 OF THEM DYNAMIC INVESTIGATIONS WERE CARRIED BEFORE AND AT DIFFERENT PERIODS AFTER THE OPERATION. THE DATA DERIVED TESTIFY TO THE FACT THAT IN PATIENTS WITH PEPTIC ULCER THERE IS ALSO SEEN A SIMULTANEOUS RISE OF THE INCRETORY ACTIVITY OF THE PANCREAS, APPARENTLY, AS THE RESULT OF NEUROREFLEX DISTURBANCES. CHANGES IN THE PANCREAS ARE, EVIDENTLY, THE CAUSE OF A NUMBER OF COMPLICATIONS OCCURRING IN THE IMMEDIATE AND REMOTE POSTOPERATIVE PERIODS. THIS SHOULD BE TAKEN INTO CONSIDERATION WHEN CHOOSING THE OPERATIVE TECHNIQUE.

UNCLASSIFIED

KHRUSLOVA, S. G.

UNCLASSIFIED

SECTION V Sci. Section Atmosphere Research

Name: Institute of Photosynthesis, Pushchino
Description:

PCS-89
June 71

(U) During this quarterly reporting period, one new article was

located from the Institute of Photosynthesis in Pushchino. On the basis of this

1970 article on plant growth, it was possible to associate three new persons

with the Institute: S. G. Khruslova, V. L. Smalava, and Ye. F. Yegorova (34).
To the present time it has not been possible to identify very many persons with
the Institute; however, the complete listing of staff members identified to
date is given below:

photo-synthesis
List of Photosynthesis

- Akulova, Ye. A.
- Prokhorova, L. I.
- Gavrilova, V. A.
- Sadovnikova, N. D.
- Khruslova, S. G.
- Smalava, V. L.
- Lebedev, A. I.
- Sidorov, A. M.
- Makarov, A. D.
- Sanikov, I. P.
- Kal'yan, A. N.
- Sokolovskiy, Yu. M.
- Hokhin, Ye. N.
- Surovtsev, V. I.
- Olyegantshikova, G. D.
- Yegorova, Ye. F.
- Popova, N. B.
- Yevstignejev, V. B.

ИМЕНИ АКАДЕМИКА

USSR

UDC 621.385.01

~~KHRUSTACHEV, K. Y.~~

"Computation of the Temperature of the Sectorial Support of a Spiral Delay System"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCH (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 1, pp 27-34 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A151)

Translation: In a linear approximation, this paper considers the steady-state thermal regime of the dielectric supports [opor] of a sectorial cross section which strengthen the spiral delay system in the high-frequency units of Type 0 devices. An approximate evaluation is made of the effect of non-idealness of their thermal contacts with the delay system, on the temperature in the supports. 16 ref. Author's Abstract.

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USSR

UDC 621.385.6:536.21

KHFUSTACHEV, K. I.

"Computation Of Temperature In 'Smooth' Delay System, To The Interior Surface Of Which A Heat Flux Is Supplied"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 86-96 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A50)

Translation: A solution is approximated of the linear steady-state problem of thermal conductivity for an infinitely long high-frequency unit [blok] of a Type C tube, which consists of two metal coaxial ducts [trube] -- a "smooth" delay system and a housing which is cooled -- between which is found a set of dielectric bearings (rods) of sectorial cross section. 9 ref. Summary.

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USSR

UDC 536.243

KHRUSTALEV, B. A.

"Transient Heat Transfer of Disc Heated by Variable Radiation Flux and Basic Calculations of Disc Radiation Meter"

Moscow, Teplo-Massopernos v Odn-o-i Dvukhfaznykh Sredakh, 1971, pp. 114-123

Abstract: The analysis of heat transfer in a disc subject to radiation flux is required for the development of a disc type radiation meter.

The thin disc is built-in at the periphery into the body of the meter. The differential equation of the heat balance (1") is set up taking into account the conductivity, convection, absorption and emission.

The solutions are obtained for the following cases:

- (a) Uniform radiation flux
- (b) Radiation flux is a linear function of time
- (c) Radiation flux is a cyclic function of time
- (d) Radiation flux nonuniformly distributed in space

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KHRUSTALEV, B. A., *Teplo-Massopernos v Odno-i Dvukhfaznykh Sredakh*, 1971,
pp 114-123

The radiation meter sensitivity which is essentially the ratio of the temperature to the radiation flux is given as a function of Fourier number.

The electromotive force of a stainless steel-constantan disc is also presented.

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USSR

UDC 536.243

KHRUSTALEV, B. A. and RAKOV, A. M.

"Investigation of Surface Roughness Effect on Spectral and Integral Radiation Properties"

Moscow, Teplo-Massopernos v Odn-o-i Dvukhfaznykh Sredakh, 1971, pp 126-135

Abstract: The effect of surface roughness on spectral and integral thermal radiation is investigated.

Five molybdenum tubes of different surface roughness were tested. The tubes were placed in a vacuum chamber and heated by electric current.

The degree of blackness was plotted versus temperature and versus wave length for various surface roughnesses. The degree of blackness increases with the roughness, it changes little with the wave length in the infrared region (wave lengths over 1 micron).

The pitch of the surface irregularities as well as the depth affect the radiation properties.

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RADIATIVE PROPERTIES OF SOLID BODIES -U-
AUTHOR--KHRUSTALEV, B.A. *K*
COUNTRY OF INFO--USSR
SOURCE--INZHENERNO-FIZICHESKII ZHURNAL, VOL. 18, APR. 1970, P. 740-762
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--RADIATIVE HEAT TRANSFER, EMISSIVITY, SOLID PHYSICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1380 STEP NO--UR/0170/70/018/000/0740/0762
CIRC ACCESSION NO--AP0125028
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125028
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SURVEY OF THE CURRENT STATUS OF
OUR KNOWLEDGE ON THE RADIATIVE PROPERTIES OF CONSTRUCTION MATERIALS AND
WORKING MEDIA, WHICH ARE ESSENTIAL IN THE CALCULATION OF HEAT TRANSFER
BY RADIATION. THE RADIATIVE PROPERTIES ARE CLASSIFIED, AND THE
APPLICATION OF THE VARIOUS RADIATIVE PROPERTIES IN ENGINEERING
CALCULATIONS IS EXAMINED. METHODS AND MEANS OF STUDYING EXPERIMENTALLY
THE RADIATIVE PROPERTIES OF SOLIDS ARE DISCUSSED. FACILITY:
GOSUDARSTVENNYI NAUCHNO-ISSLEDOVATEL'SKII ENERGETICHESKII INSTITUT,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 546.821*17+546/46*21

KHRUSTALEV, B. N., LEONOVICH, B. I., GUREVICH, YU. G., and NEVRAYEV, YU. P.

"Interactions in the Titanium Nitride-Magnesium Oxide System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8,
No 5, 1972, pp 846-848

Abstract: The solid-phase interaction in the system TiN-MgO is studied. The end product of this interaction is $\alpha\text{-Ti}_2\text{O}_3$; the interaction occurs with the formation of an intermediate product, a TiO-MgO solid solution, which decomposes into $\alpha\text{-Ti}_2\text{O}_3$. The coefficients of diffusion of titanium through the phases $\alpha\text{-Ti}_2\text{O}_3$ and MgO are determined.

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USSR

LOGUNOV, A. A., MESTVIRISHVILI, M. A., and ~~KHRUSTALEV, G. A.~~ Institute of High-Energy Physics

"Restrictions on the Behavior of the Elastic and Inelastic Cross-Sections at High Energies. II"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 2, Nov 71, pp 153-189

Abstract: The first part of the article, dealing with the short-range action of nuclear forces and restrictions on the behavior of the elastic and inelastic cross-sections, considers the effective interaction radius, restrictions on the behavior of the cross-sections, the equality of the total interaction cross-sections of particles and antiparticles at high energies, and restrictions on the behavior of the total interaction cross-sections at high energies. The second part of the article, on the basis of the condition of unitarity and analyticity, obtains conclusions regarding the behavior of the differential multiple-production cross-section with energy growth in the wide production angle region. Topics covered in the second part include the

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LOGUNOV, A. A. et al, Teoreticheskaya i Matematicheskaya Fizika,
Vol 9, No 2, Nov 71, pp 153-189

integral representation, inverse integral representation, the upper bound of the amplitude of the inelastic process with fixed projection of moment, the upper bound of the decrease in the differential inelastic cross-section in the wide-angle region at high energies, the sensitivity of the bounds of the multiple-production cross-section to the dimensions of the analyticity region for variables $\cos \theta$ and ω , the Kinoshita-Loeffell-Martin representation, and the evaluation of the differential elastic back-scattering cross-section.

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Nuclear Physics

USSR

LOGUNOV, A. A., MESTVIRISHVILI, M. A., and KHRUSTALEV, O. A. Institute of High Energy Physics, Academy of Sciences of the USSR.

"Restrictions on the Behavior of the Cross Sections of Elastic and Inelastic Processes at High Energy" (Part 1)

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 1, Oct 71, pp 3-43

Abstract: Present day theory of strong interactions at high energies differs considerably from its parent theory -- the quantized field theory of the middle fifties. The main reason for this discrepancy was the failure of perturbation theory, the only working tool of the field theory at the time, in the description of strong particle interactions. While applied successfully to the exchange of single particles, it proved to be completely inadequate in situations involving strong interactions where emission of many mesons was as equally probable as emission of a single meson.

The purpose of the present work was to stress the importance of inelastic processes, essential for understanding dynamics of interactions at high energy. General properties of the differential cross section processes of multiple

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