AP0045618

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 37-44

Ref. Code: UR 0463

THE ROLE OF PROTEIN SYNTHESIS IN THE UV-INDUCTION OF COLICINOGENIC FACTOR E1 IN E. COLI

Likhoded, V. G.; Padalko, T. B.; Sayenko, A. S.; Tolcheyev, Yu. D.

Institute for Vaccines and Sera Research, Ministry of Health, of the USSR, Moscow and Institute of Medical Radiology, Academy of Medical Sciences, Obninsk, USSR

The role of protein synthesis in UV-induction of colicinogenic factor E1 was investigated. UV-induction was shown to depend on the presence of some protein(s) synthesized prior to UV-irradiation. During a lag period after irradiation protein synthesis was not required for UV-induction of colicinogenic factor. In new infected cells UV-induction and zygotic induction were shown to depend on protein synthesis just after the transfer of colicinogenic factor.

//

REEL/FRAME

19780595

USSR

UDC: 621.373:530.145.6

FARSHTENDINER, V. L., TOLCHINSKAYA, R. M., KLYUYEV, V. P., BARANOV, B. A., ANGERT, N. B.

"A Method of Making Monodomain $LiNbO_3$ Crystals of 0° Orientation"

USSR Author's Certificate No 280450, filed 21 Jun 68, published 10 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D239 P)

Translation: This Author's Certificate introduces a method of making monodomain $LiNbO_3$ crystals of 0° orientation. As a distinguishing feature of the patent, the size and yield of the output product are increased by annealing the crystal grown to the necessary dimensions at 1160-1180°C for 30-60 minutes under a voltage of 15-25 V, then cooling the crystal to 1025-1125°C while reducing the voltage by 25-40 percent followed by cooling of the crystal at a rate of 25-30°C/hr.

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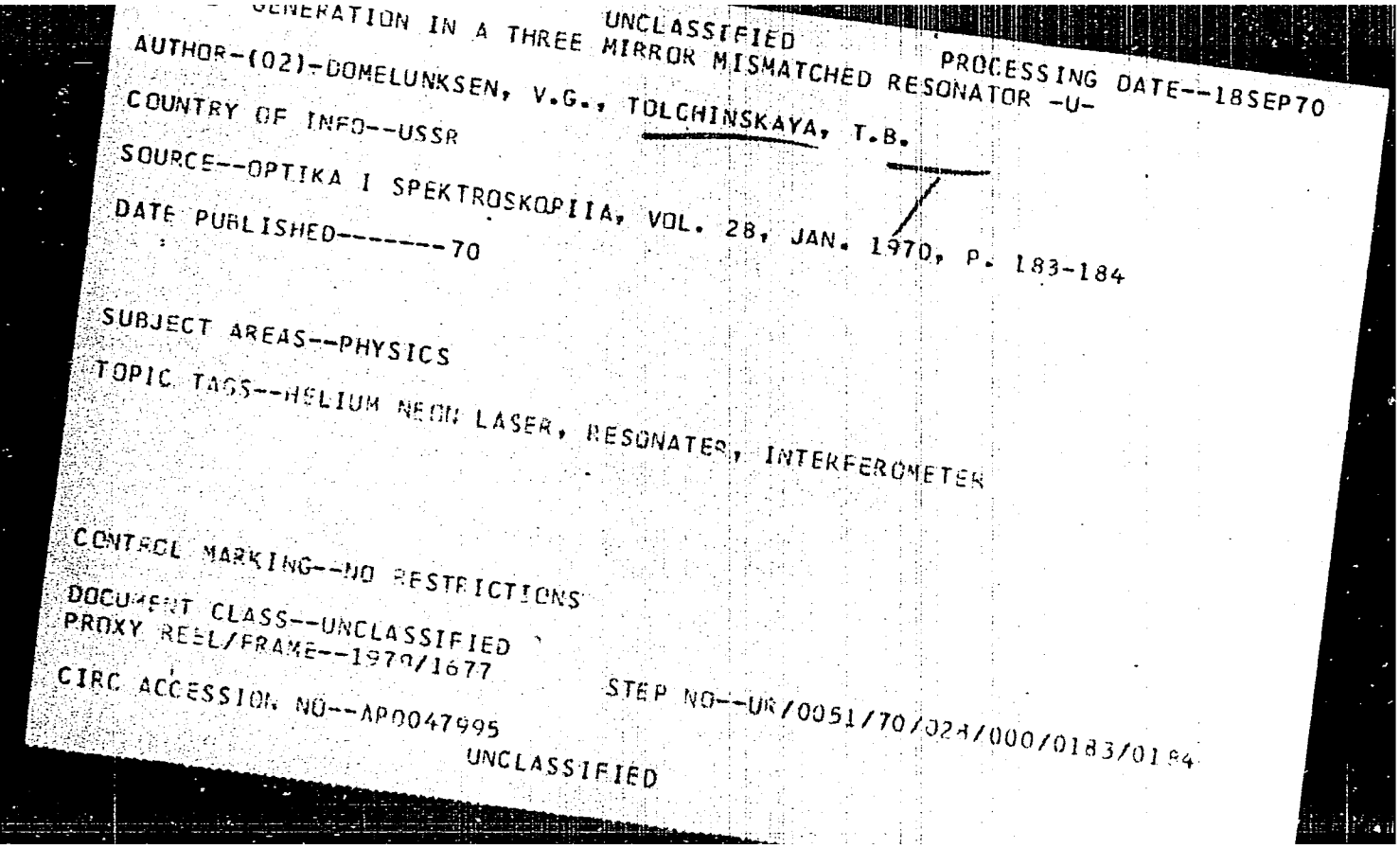


UNCLASSIFIED

GENERATION IN A THREE MIRROR MISMATCHED RESONATOR -U-

PROCESSING DATE--18SEP70

AUTHOR-(02)-DOMELUNKSEN, V.G., TOLCHINSKAYA, T.B.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P. 183-184

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HELIUM NEON LASER, RESONATOR, INTERFEROMETER

CONTROL MARKING--NO RESTRICTIONS

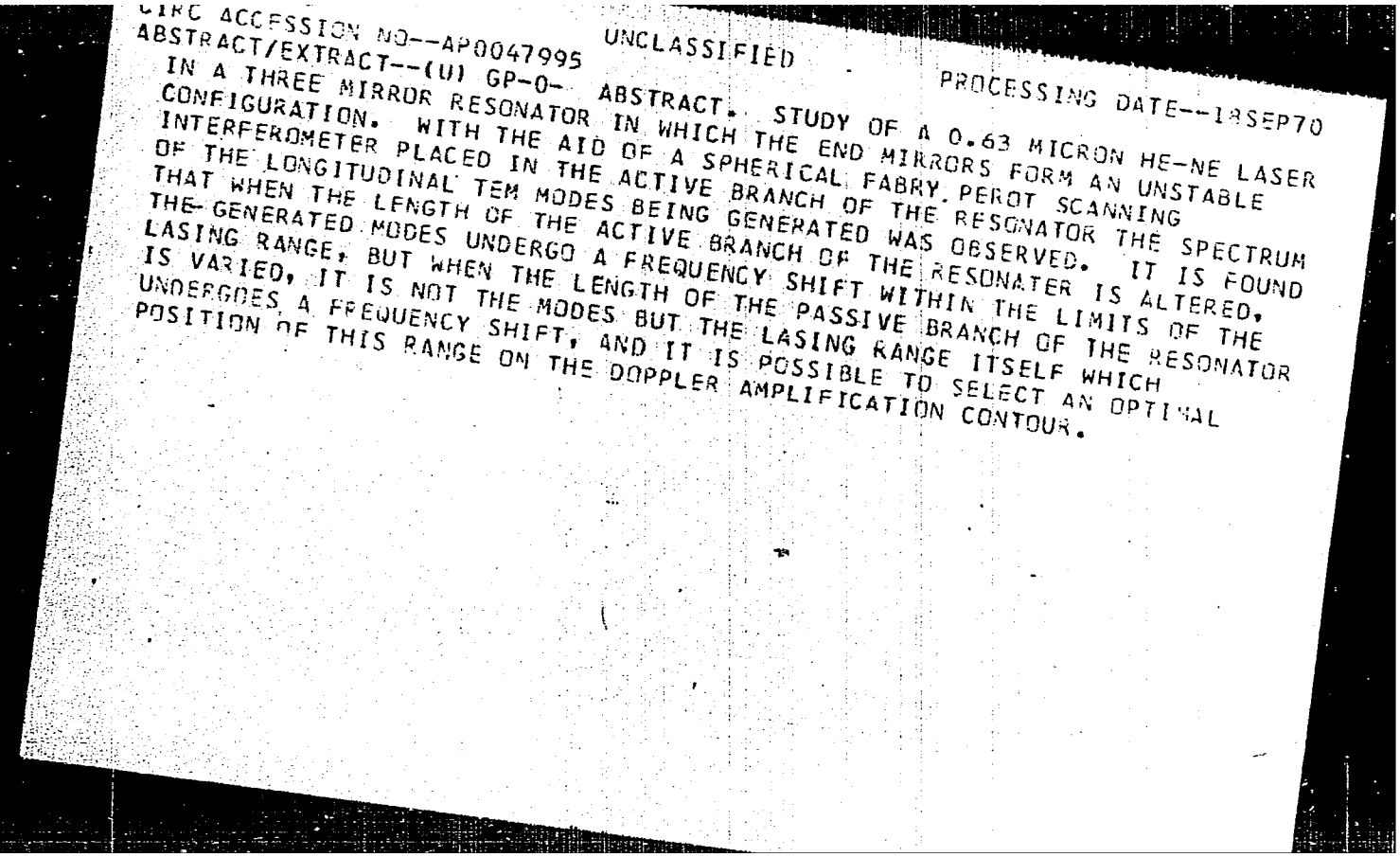
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1677

STEP NO--UR/0051/70/028/000/0183/0184

CIRC ACCESSION NO--AP0047995

UNCLASSIFIED



CIRC ACCESSION NO--AP0047995 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF A 0.63 MICRON HE-NE LASER IN A THREE MIRROR RESONATOR IN WHICH THE END MIRRORS FORM AN UNSTABLE CONFIGURATION. WITH THE AID OF A SPHERICAL FABRY-PEROT SCANNING INTERFEROMETER PLACED IN THE ACTIVE BRANCH OF THE RESONATOR THE SPECTRUM OF THE LONGITUDINAL TEM MODES BEING GENERATED WAS OBSERVED. IT IS FOUND THAT WHEN THE LENGTH OF THE ACTIVE BRANCH OF THE RESONATER IS ALTERED, THE GENERATED MODES UNDERGO A FREQUENCY SHIFT WITHIN THE LIMITS OF THE LASING RANGE, BUT WHEN THE LENGTH OF THE PASSIVE BRANCH OF THE RESONATOR IS VARIED, IT IS NOT THE MODES BUT THE LASING RANGE ITSELF WHICH UNDERGOES A FREQUENCY SHIFT, AND IT IS POSSIBLE TO SELECT AN OPTIMAL POSITION OF THIS RANGE ON THE DOPPLER AMPLIFICATION CONTOUR.

USSR

KLESHCHEV, G. V., TOLDIN, V. A., SHEYNKMAN, A. I., RASPOPOV, Yu. G., SHUMILOV, D. V., and TROFIMOV, V. G., Chelyabinsk Pedagogical Institute

UDC 669.715:539.26

"X-Ray and Electron-Microscopic Investigation of the Decay of Supersaturated Solid Solution in AlZn Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 762-767

Abstract: A study was made of the decay of the supersaturated solid solution in AlZn alloys with 40, 50, and 60 wt. % zinc using the X-ray and electron-microscopic methods. The process of decay at tempering temperatures above 200 (but below 275°) depends on the rate of quenching of the specimen from the homogenizing temperature to the tempering temperature. During slow quenching a metastable α'-phase develops, while during fast quenching a stable α-phase develops. The possible reasons for such a dependence are considered. The role of the effect of foil thickness is noted.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ZONES AND MODULATED STRUCTURE IN AGING AL,ZN ALLOYS -U-

AUTHOR-(05)-KLESHCHEV, G.V., TOLOIN, V.A., SHUMILOV, O.V., PANOV, V.N., RASPOPOV, YU.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 818-20

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, ZINC ALLOY, SOLID SOLUTION, ELECTRON MICROSCOPE, METAL AGING, METAL MICROSTRUCTURE

CONTROL MARKING--NO RESTRICTIONS

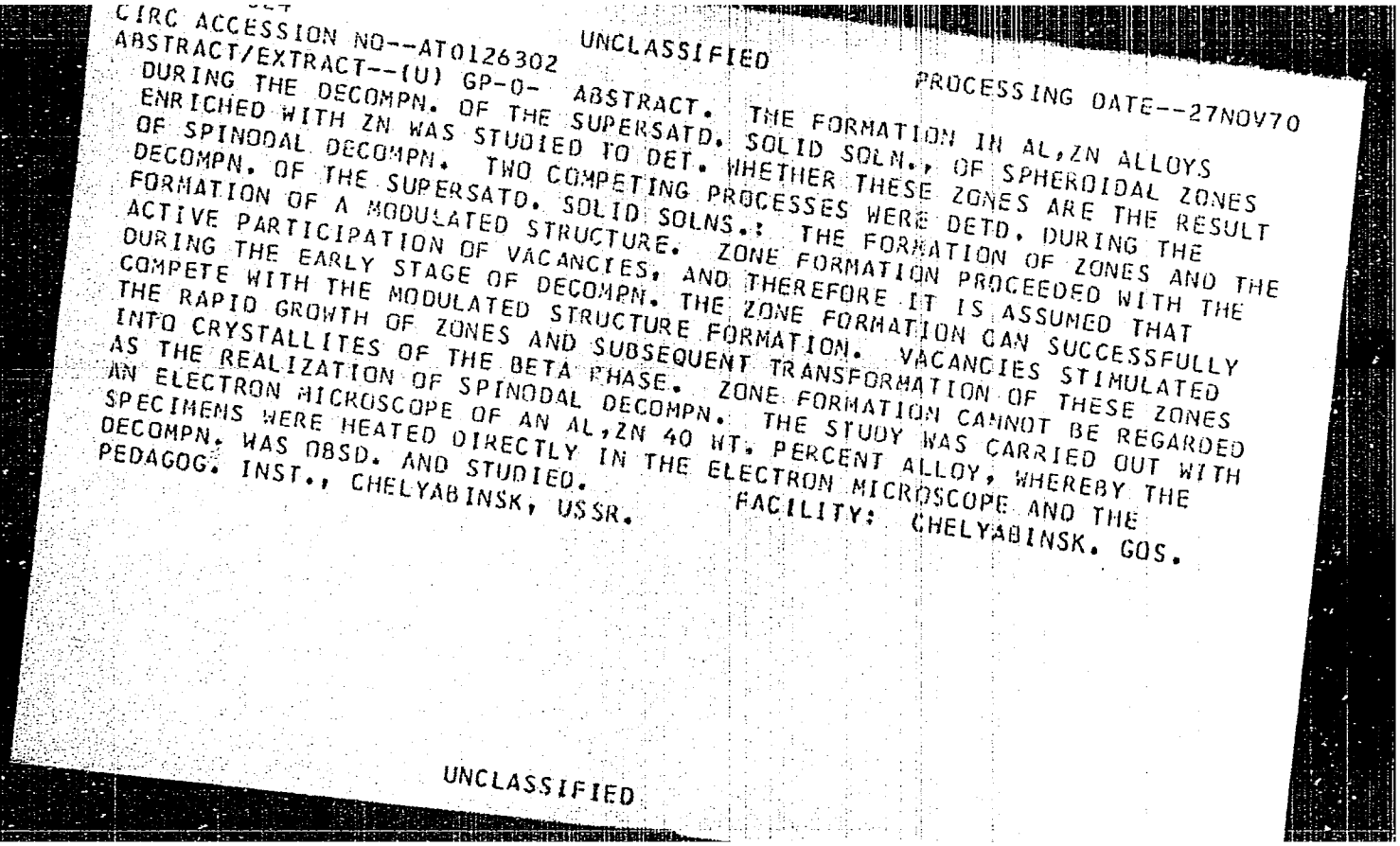
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0555

STEP NO--UR/0020/70/191/004/0813/0820

CIRC ACCESSION NO--AT0126302

UNCLASSIFIED



CIRC ACCESSION NO--AT0126302 UNCLASSIFIED PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION IN AL,ZN ALLOYS DURING THE DECOMPN. OF THE SUPERSATD. SOLID SOLN., OF SPHEROIDAL ZONES ENRICHED WITH ZN WAS STUDIED TO DET. WHETHER THESE ZONES ARE THE RESULT OF SPINODAL DECOMPN. TWO COMPETING PROCESSES WERE DETD. DURING THE DECOMPN. OF THE SUPERSATD. SOLID SOLNS.: THE FORMATION OF ZONES AND THE FORMATION OF A MODULATED STRUCTURE. ZONE FORMATION PROCEEDED WITH THE ACTIVE PARTICIPATION OF VACANCIES, AND THEREFORE IT IS ASSUMED THAT DURING THE EARLY STAGE OF DECOMPN. THE ZONE FORMATION CAN SUCCESSFULLY COMPETE WITH THE MODULATED STRUCTURE FORMATION. VACANCIES STIMULATED THE RAPID GROWTH OF ZONES AND SUBSEQUENT TRANSFORMATION OF THESE ZONES INTO CRYSTALLITES OF THE BETA PHASE. ZONE FORMATION CANNOT BE REGARDED AS THE REALIZATION OF SPINODAL DECOMPN. THE STUDY WAS CARRIED OUT WITH AN ELECTRON MICROSCOPE OF AN AL,ZN 40 WT. PERCENT ALLOY, WHEREBY THE SPECIMENS WERE HEATED DIRECTLY IN THE ELECTRON MICROSCOPE AND THE DECOMPN. WAS OBSD. AND STUDIED. FACILITY: CHELYABINSK. GOS. PEDAGOG. INST., CHELYABINSK, USSR.

UNCLASSIFIED

UDC: 535.33/.34

USSR

TOLENACHEV, Yu. A.

"Random Errors and Accuracy of Measurement of Absorption Factor by Radiation Reabsorption"

Vestn. Leningr. Un-ta [Herald of Leningrad University] No 22, 1969, pp 68-76 (translated from Referativnyy Zhurnal Fizika, No 6, 1970, Abstract No 6D305, unsigned)

Translation: It is shown how the accuracy of measurement of concentration of atoms in the excited state by reabsorption of radiation in the light source itself changes as a function of the source of errors and the absorption factors. The main sources of errors with photoelectric recording of radiation are considered to be 1) fluctuations of current in the light sensor; 2) fluctuations of light source intensity; 3) thermal and shot noises in the amplifying and recording devices, zero drift of the electronic circuits; 4) errors in reading from the scale of the device. Methods are presented for calculation of the accuracy of measurement, and the main methods are compared from this standpoint.

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UDC 577.1:615.7/9

USSR

DVIZHKOV, P. P., TOLGSKAYA, M. S.

"Histogenesis of Silicotic Fibrosis"

Sb. tr. N.-i. in-t gigiyeny truda i profzabolevaniy. Gruz SSR (Collected Works of the Scientific Research Institute of Industrial Hygiene and Occupational Diseases. Georgian SSR), 1970, Vol 12, pp 131-134 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 70, Abstract No 19 F1796 by A. Ignat'yev)

Translation: Silicosis is characterized by increased permeability of the vascular walls due to SiO_2 with the leakage of plasma proteins into lung tissues and subsequent development of the fibrous structures of connective tissue, the bulk of which is made up of muco-proteins not found in normal collagen.

1/1

USSR UDC 612.014.416(049.3)

TOLGSKAYA, M. S., and GORDON, Z. V.

"Morphological Changes Induced in Experimental Animals by Electromagnetic Radiofrequency Waves" (A monograph reviewed by A. P. Avtsyn)

Moscow, Gigyena Truda i Professional'nyye Zabolevaniya, No 3, 1972, p 60

Abstract of Review: The monograph surveys the growing application of electromagnetic waves of various frequencies and the increasing exposure of workers, technicians, and engineers to this type of radiation. It presents and discusses original and literature a data on pathological changes induced by radiofrequency waves in various organs, especially the peripheral nervous system, the brain stem, endocrine glands, and neuroendocrine systems. The individual findings are synthesized into an overall concept of the mechanism of action. Maximum permissible exposure standards are suggested on the basis of the cumulative effects determined by the intensity and duration of irradiation. The monograph is a valuable aid to physicians and investigators specializing in occupational diseases. Problems recommended for further investigation should be given serious consideration.

1/1

USSR UDC 577.3+581.13

TOLIBEKOV, D., and KRASICHKOVA, G. G., Institute of Physiology and Biophysics of the Plants, Academy of Sciences Tadzhik SSR

"Utilization of Synthetic Pigment-Protein-Lipid Complexes in Modeling Some Properties of the Photosynthetic Apparatus"

Dushanbe, Izvestiya Akademii Nauk Tadzhikskoy SSR, No 2, 1970, pp 3-11

Abstract: A system was developed for modeling certain physicochemical, optical, and photochemical properties of the photosynthetic apparatus of green leaves. One of the most important tasks was selection of the carrier; the use of various protein and protein-lipid compounds provides a system capable of modeling quite complex properties such as pigment-carrier bond strength and resistance to such factors as visible light and pH, as well as achievement of some partial photosynthetic reactions which could not be carried out with inorganic and simple polymer compounds. Studies of pigment bond strength showed that the bonds resembled to some extent those found by Chernomorskiy in the leaves of various plants. All of the partially reconstructed systems exhibited photochemical activity, i.e., they brought about the disepoxidation reaction of violaxanthin, but the light effect of the conversions of xanthophyls was found to be

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some factors are still missing in these systems. The levels of the photoreaction in systems synthesized on the basis of different proteins varied. The most active was a water soluble system in which yeast proteins served as the carrier.

2/2

USSR

TOLIBEKOV, D., et al, Izvestiya Akademii Nauk Tadzhikskoy SSR, No 2, 1970, pp 3-11

considerably lower in the reconstructed systems than in the leaves: evidently some factors are still missing in these systems. The levels of the rhotenone

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0122094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENTS OF PHOTOCATHODE, DIAPHRAGM, AND FIRST DYNODE WERE MEASURED DURING IRRADIATION OF THE PHOTOCATHODE BY LIGHT WITH A WAVELENGTH OF NU SUB1 EQUALS 650 NM AND NU SUB2 EQUALS 450 NM, AND AS A FUNCTION OF SUPPLY VOLTAGE, AS WELL AS WITH (AND WITHOUT) I.R. ILLUMINATION. THE I.R. ILLUMINATION IN THE REGIME OF SATURATION INCREASES THE PHOTOCATHODE CURRENT, WHILE THE DIFFERENCE BETWEEN THE DYNODE AND CATHODE CURRENTS IS POSITIVE. AT THE SAME TIME, THE RATIO OF LATTER DIFFERENCE AND OF THE DYNODE CURRENT IS A FUNCTION OF THE WAVELENGTH. THE RATIO OF DYNODE CURRENTS FOR THE TWO WAVELENGHTS DEPENDS UPON THE VOLTAGE BEFORE THE SATURATION REGIME. THE OBSERVED EFFECTS, WHICH AMOUNT TO SEVERAL PERCENTS, ARE INTERPRETED ON THE BASIS OF SB-CS PHOTOCATHODE MODEL.

UNCLASSIFIED

USSR

UDC: 629.78.018.1

RINKEVICHYUS, B. S., TOLKACHEV, A. V., KHARCHENKO, V. N.

"Determination of the Velocity of a Hypersonic Stream by the Doppler Effect"

Uch. Zap. Tsentr. Aero-Gidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, Vol 4, No 1, pp 25-32 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 6, 1973, Abstract No 6.41.133, from the Resume).

Translation: The operation of an optical Doppler velocity measuring device is studied. A narrow-band Fabry-Perot interferometer filter is used to separate the Doppler frequency shift. Experimental data are presented on the stream velocity profile in a hypersonic wind tunnel at $M_\infty = 5$ with prechamber temperatures of 120 and 250° C. The maximum value of velocity measured was 1040 m/sec. The results are compared with data produced by temperature and pressure measurements. 4 figures, 8 biblio. refs.

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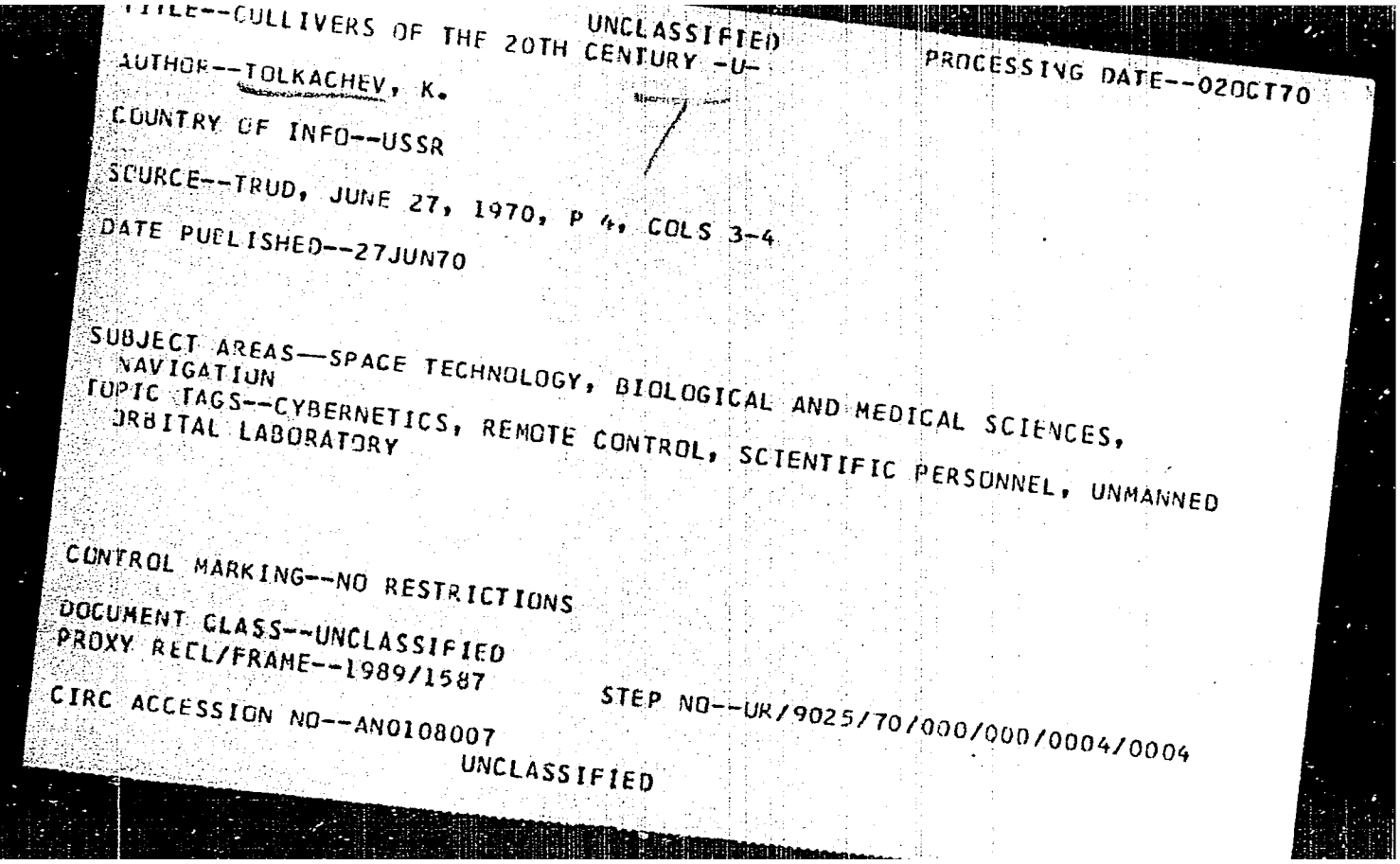


UNCLASSIFIED

TITLE--GULLIVERS OF THE 20TH CENTURY -U-

PROCESSING DATE--02OCT70

AUTHOR--TOLKACHEV, K.

COUNTRY OF INFO--USSR

SOURCE--TRUD, JUNE 27, 1970, P 4, COLS 3-4

DATE PUBLISHED--27JUN70

SUBJECT AREAS--SPACE TECHNOLOGY, BIOLOGICAL AND MEDICAL SCIENCES, NAVIGATION

TOPIC TAGS--CYBERNETICS, REMOTE CONTROL, SCIENTIFIC PERSONNEL, UNMANNED ORBITAL LABORATORY

CONTROL MARKING--NO RESTRICTIONS

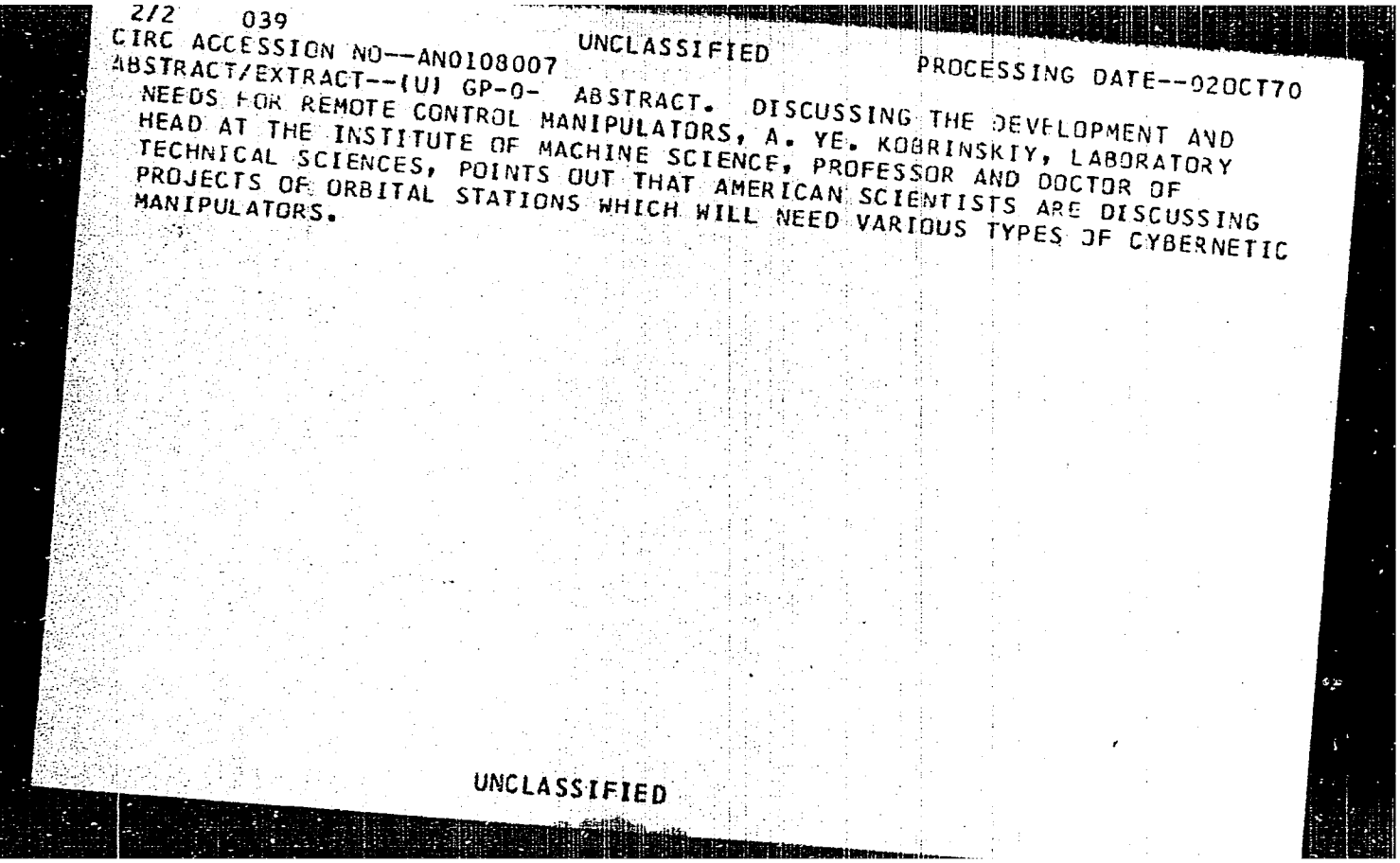
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1587

STEP NO--UR/9025/70/000/000/0004/0004

CIRC ACCESSION NO--AN0108007

UNCLASSIFIED



2/2 039 UNCLASSIFIED
CIRC ACCESSION NO--AN0108007 PROCESSING DATE--02OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSING THE DEVELOPMENT AND NEEDS FOR REMOTE CONTROL MANIPULATORS, A. YE. KOBRINSKIY, LABORATORY HEAD AT THE INSTITUTE OF MACHINE SCIENCE, PROFESSOR AND DOCTOR OF TECHNICAL SCIENCES, POINTS OUT THAT AMERICAN SCIENTISTS ARE DISCUSSING PROJECTS OF ORBITAL STATIONS WHICH WILL NEED VARIOUS TYPES OF CYBERNETIC MANIPULATORS.

UNCLASSIFIED

USSR

UDC 621.43.052

STANISLAVSKIY, L. V., Candidate of Technical Sciences, and TOLKACHEV, N. A., Senior Instructor

"Exergic Analysis of Losses in the Gas Distribution System of an Internal Combustion Engine With a Turbosupercharger"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 5, 1972, pp 97-101

Abstract: In determining the losses of the gas distribution system of an internal combustion engine with a turbosupercharger, exergic analysis is employed to relate the resistence of the exhaust of the system to the resistence of the intake elements. 2 figures. 2 references.

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USSR

UDC: 624.824:624.131.6

ZINEVICH, N. I., Engineer, KUPERMAN, V. L., Candidate of Technical Sciences, KUZ'MIN, K. K., Engineer, and TOLKACHEV, L. A., Engineer

"Erection of an Earthfill Dam With an Injected Core and a Film Type Diaphragm Without Drainage of the Foundation Pit"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 5, May 73, pp 20-23

Abstract: The authors describe a dam built for the Atbashinskaya Hydroelectric Power Station on the Atbasha River. The dam was designed for a head of 75 m and is located in rough mountain terrain associated with complex seismic and geologic conditions. This is an earthfill type dam with an injected core and a film type diaphragm without drainage of the foundation pit. This method of construction made it possible to cut down on construction time by eight to ten months and save 300 thousand rubles. The use of a film type diaphragm and the method for fastening it to the steep stone walls made it possible to locate an earthfill dam in a narrow canyon. These conditions ensured a significant reduction in the dam volume and reduced the cost of construction (900 thousand rubles). The use of the film diaphragm as an antifiltration device made it possible to continue construction during the winter months at temperatures as low as -20°C. The construction of special galleries for injection operations made it possible to continue the dam fill operations without delays.

1/1

USSR

UDC: 621.311.22.002.51.681.2

ORLOVSKIY, V. V., Engineer, TOLKACHEV, N. F., Engineer, Leningrad Department of the All-Union State Institute for the Design and Planning of Electrical Equipment for Heat Engineering Installations, State Regional Electric Power Plant 19, Leningrad

"A New System for Monitoring High-Capacity Power Units"

Moscow, Teploenergetika, No 8, Aug 72, pp 31-32

Abstract: The paper describes a central control system comprised of a control panel and four display boards for monitoring the operation of a 300 megawatt gas-oil electric power plant. The system incorporates 260 meters graduated in the appropriate parameters. When parameters deviate beyond preset limits, the situation is indicated by a change in the color of the light for the corresponding instrument, as well as by combined light-and-sound signals. The meters are mnemonically arranged with reinforcement by a large-scale diagram of the power installation. The system is now in use on three power plants, the first of which was put into operation in 1969. The system is reliable, and operation is readily learned by control personnel.

1/1

USSR

UDC: 574.94

MONAKHOVA, T. Ye., PROSKURNINA, N. F., TOLKACHEV, O. N., KOBANOV, V. S., PEREL'SON, M. Ye., All Union Scientific Research Institute of Medicinal Plants

"Alkaloids of Sophora Alopecuroides. 3-α-Hydroxysophoridine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1973, pp 59-64

Abstract: In a continuation of research on the alkaloids of Sophora alopecuroides, preparations were made from the aerial part of the plant in the fruit-bearing stage. The sum of the alkaloids obtained by the conventional dichloroethane method (2.5%) was divided into fractions of strong and weak bases. The following alkaloids were distinguished in the fraction of weak bases by extraction with various solvents combined with aluminum oxide chromatography: sophoridine, cytisine and three bases -- $C_{13}H_{18}N_2O_2$(III), $C_{15}H_{24}N_2O_2$ (IV), and $C_{15}H_{24}N_2O_2$ (VI). The fraction of strong bases yielded sophoridine, cytisine and baptifoline (V). This is the first time that the alkaloids cytisine and baptifoline have been isolated from this plant. Infrared and mass spectroscopy suggest the structure of 3α-hydroxysophoridine for base IV.

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USSR

UDC 547.94

YAKHONTOVA, L.D., SHEYCHENKO, V.I., and TOLKACHEV, O.N.,
All Union Scientific Research Institute of Medicinal Plants

"Study of the Glaucium Flavum Alkaloids. The Structure of Glauvine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1972, pp 214-218

Abstract: The alkaloids extracted from Glaucium flavum with chloroethane were subjected to chromatographic separation on an aluminum oxide packed column. The separation of alkaloids was accomplished by elution with benzene and benzene-methanol mixtures containing successively higher fractions of methanol (eluent of gradually increasing polarity). In addition to the earlier found components (glaucine, isocoridine, protopine and isoboldine) three new bases were eluted: (1) a yellow substance of $C_{20}H_{17}NO_5$ composition, identified as O-methylateroline; (2) a colorless substance of $C_{19}H_{21}NO_4$ composition, previously unreported in literature, was named glauvine. It was found that glauvine can be obtained by heating o-methylateroline at 150° C for 18-20 hours. Acid solutions of glauvine are orange in color, while

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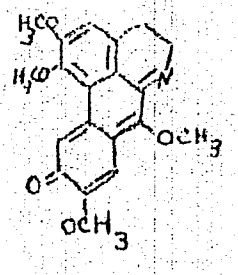
USSR

YAKHONTOVA, L.D., et al, Khimiya Prirodnykh Soyedineniy, No 2, 1972, pp 214-218

alkaline solutions are green. UV spectra of glauvine and O-methylateroline are very similar indicating the similarities in their chromophoric groups. On the basis of IR and NMR spectroscopic studies the following structure is proposed for glauvine.



2/2

USSR

UDC 547.944/945

FADEYEVA, I. I., FESENKO, D. A., IL'INSKAYA, T. N., PEREL'SON, M. YE., and TOLKACHEV, O. N., All- Union Scientific-Research Institute of Medicinal Plants

"Alkaloids of Stephania Hernandifolia. VIII. Methylhernanine"

Tashkent, Khimiya Prirodnykh Soyedineniye, No 4, 1971, pp 455-456

Abstract: This a is a continuation of research begun on alkaloids extracted from the above-ground portion of Stephania hernandifolia.

From the hydrochloride, which is weakly soluble in alcohol, a new alkaloid was extracted with formula $C_{20}H_{27}O_6N$ and melting point 152-153°C (ethanol-ether), which was named methylhernandine. The infrared and magnetic resonance spectra of this substance were obtained.

The alkaloid was finally identified with N-methylamine alcohol, which is obtained in the hydrolysis of hernandifoline.

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USSR

UDC 547.92

IL'INSKAYA, T. N., FESENKO, D. A., FADEYEVA, I. I., PEREL'SON, M. Ye., and TOLKACHEV, O.N., All-Union Scientific Research Institute of Medicinal Substances

"Stephania Hernandifolia Alkaloids. VII. Hernandin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 180-184

Abstract: The chloroform mother liquors of the Stephania hernandifolia extracts left after the removal of hernandifolin was evaporated in vacuum. The tarry residue was treated repeatedly with 10% HCl solution, the combined acid extracts were thoroughly reextracted with chloroform, washed with 10% ammonia solution and water, dried and evaporated. The residue was crystallized from ethanol to yield harnandin, m.p. 197-199°, $[\alpha]_D^{20}$ = -33°. IR, NMR, and mass spectra were studied in an attempt to discover the structure of this product.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320004-5"

USSR

UDC 547.92

IL'INSKAYA, T. N., FESENKO, D. A., FADEYEVA, I. I., PEREL'SON, M. Ye., and TOLKACHEV, O.N., All-Union Scientific Research Institute of Medicinal Substances

"Stephania Hernandifolia Alkaloids. VII. Hernandin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 180-184

Abstract: The chloroform mother liquors of the Stephania hernandifolia extracts left after the removal of hernandifolin was evaporated in vacuum. The tarry residue was treated repeatedly with 10% HCl solution, the combined acid extracts were thoroughly reextracted with chloroform, washed with 10% ammonia solution and water, dried and evaporated. The residue was crystallized from ethanol to yield hernandin, m.p. 197-199°, $[\alpha]_D^{20}$ = -33°. IR, NMR, and mass spectra were studied in an attempt to discover the structure of this product.

1/1

USSR

UDC 547.92

FESENKO, D. A., FADEYEVA, I. I., IL'INSKAYA, T. N., PEREL'SON, M. Ye., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants

"Stephania Hernandifolia Alkaloids. VI. Hernandifolin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 158-164

Abstract: 10 kg of dry Stephania hernandifolia grass was immersed in 10% ammonia, and after decantation extracted with dichloroethane. The extract was treated with 10% sulfuric acid, neutralized with ammonia and extracted with ether, made alkaline (pH 9), and reextracted with chloroform. The extract was dried, concentrated and chromatographed on an alumina column. A mixture of three alkaloids was obtained from the chloroform eluate, and after a triple recrystallization from chloroform 1.2 g of hernandifolin (I) was obtained in the form of an addition product with chloroform, m.p. 227-227.5°.; treatment of this material with ether followed by ammonia gave free (I), m.p. 128-229°, $[\alpha]_D = -25°$. Reacting (I) with acetic anhydride in pyridine, followed by chromatography over alumina produced diacetylnernandifolin, m.p. 171-171.5° eluted with methanol. N-Methylhernandifolin was obtained by reacting (I) with methyl iodide. Hydrolysis of (I) in

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320004-5"

USSR

FESENKO, D. A., et al., Khimiya Prirodnykh Soyedineniy, No 2, 1971, pp 158-164

alcoholic NaOH followed by treatment with sulfuric acid and finally with ammonia gave hesperitic acid, m.p. 228-229°. The structure assignment was based on the analysis of NMR, IR and mass spectral data.

2/2

USSR

UDC 547.944/945

MARGVELASHVILI, N. N., KIR'YANOVA, A. T., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants

"Chemical Study of the Alkaloids from Corydalis Rosea"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 127-128

Abstract: Dichloroethane extraction of the Corydalis rosea Leych grass yielded frive alkaloids. The strongly basic fraction consisted of protopin which was identified by direct comparison. The main component of the weakly basic fraction, melting at 237° was identified as 1-adlumidine, its racemic mixture melting at 184-186°. The fourth alkaloid isolated was found to be the 1-adlumine, m.p. 179-180°, and the mother liquor from its crystallization contained the fifth product -- dl-adlumine.

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USSR

UDC 547.944/945

FADEYEVA, I. I., PEREL'SON, M. YE., TOLKACHEV, O. N., IL'INSKAYA, T. N., and FESENKO, D. A., All Union Scientific Research Institute of Medicinal Plants

"Stephania Hernandifolia Alkaloids. IX. 3-O-Dimethylhernandifolin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 130-132

Abstract: A compound was isolated from the methanol fraction of the chromatographic separation on an alumina column of a mixture of alkaloids obtained from Stephania Hernandifolia grass. This compound had mp 148-149° and in contrast to hernandifolin, hernandine and methylhernandine showed a color reaction characteristic of o-diphenols. On the basis of IR and NMR spectroscopic data, it was assigned the structure of 3-O-dimethylhernandifolin.

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USSR

IL'INSKAYA, T. N., PEREL'SON, M. YE., FADEYEVA, I. I., FESENKO, D. A., and TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal Plants

"Stephania Delovayi Alkaloids. II. 16-Ketodelavaine"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 129-130

Abstract: A new alkaloid was isolated from the Stephania Delovayi Diels (Menispermaceae) grass, with mp 221-222°, $[\alpha]_D$ -180°. This compound showed a positive reaction for the dioxymethylene group. On the basis of UV, IR, and NMR spectroscopic analysis, this compound was claimed to be 16-ketodelavaine.

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USSR

BORISEVICH, N. A., KALOSHA, I. I., LAVRUSHIN, V. F., MASLENNIKOVA, V. P., TOLKACHEV, V. A.

UDC 621.378

"Generation Capacity of Isomer 1,4-Dipyrazolenylbenzenes"

Minsk, Zhurnal Prikladnoy Spektroskopii, No. 1, Jan 72, pp 45-48

Abstract: A large group of the 1,4-dipyrazolenylbenzenes of the structure 1,4-di(n'-$R_{n'}$-m'-m'-$R_{m'}$-$\Delta^{2'}$-pyrazolenyl-k') benzene was investigated; where n denotes 1 or 3 positions; m is 3, 5; k is 1, 3, or 5; and $R_{n'}$ and $R_{m'}$ are aryl or methyl substitutes in the position n' and m'. The fluorescence and desorption spectra and the relative quantum yield of this class have been thoroughly investigated. Three groups of compounds were studied under excitation of the second harmonic of a ruby laser: 1,4-di(1'-aryl-3'-aryl-$\Delta^{2'}$-pyrazolenyl-5') benzenes (16 substances) and 1,4-di(1'-methyl-3'-phenylpyrazolenyl-5') benzenes (A); 1,4-di(1'-aryl-5'-aryl-$\Delta^{2'}$-pyrazolenyl-3') benzenes (12 substances) and 1,4-di(1'-methyl-5'-phenylpyrazolenyl-3')-benzene (B); and 1,4-di(5'-aryl-3'-aryl-$\Delta^{2'}$-pyrazolenyl-1') benzenes (8 substances) (C). Only compounds of group (B) are generated. Generation on two wavelengths corresponding to the

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USSR

BORISLVICH, N. A., et al, Zhurnal Prikladnoy Spektroskopii, No. 1, Jan 72, pp 45-48

oscillatory maxima of the fluorescence spectra was observed in the majority of (B) compounds. The generation wavelength is in the range 425-500 nm. The relationship between the generation capacity and the structural chain of the compound is analyzed.

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USSR

UDC 535.89

BORISEVICH, N. A., BOLOT'KO, L. M., GRUZINSKIY, V. V., TOLKACHEV, V. A.

"Generation of Coumarin Solutions Under the Excitation of a Flash Bulb"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 14, No 1, Jan 71, pp 148-150

Abstract: Nine coumarin derivatives were used to obtain generation and tuning of the generation frequency. The concentration of solutions was 0.1 g/l. A specially designed quartz flash bulb with an evacuated air space (~ 60 mm) was used. A capacitor bank provided a rise time of the light pulse of the lamp of ~ 0.4 μsec. The position of the maximum and the width of the generation bands are compared for pumping by the flash bulb and pumping by the second harmonic of a ruby laser. The generation bands under both forms of pumping are wide when a nonselective resonator is used. Due to the slight overlapping of the fluorescence and absorption spectra, the generation bands correspond to the maxima of the fluorescence bands and they are not shifted or only slightly shifted with a change in the concentration of solution. Generation of coumarin derivatives was possible in several solutions. With flash bulb pumping the energy of the radiation generated for 7-sulfomethyl-amino-4-methylcoumarin decreases in the solvents water, ethyl alcohol, and

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USSR

BORISEVICH, N. A., et al., Zhurnal Prikladnoy Spektroskopii, Vol 14, No 1, Jan 71, pp 148-150

dimethylformamide. Generation frequency tuning was carried out for a solution of 7-amino-4-methylcoumarin in ethanol, which had a generation band of the shortest wavelength of those known in coumarins. The most intensive part of the generation band was located in the range 438-446 nm. Smooth frequency tuning with simultaneous narrowing of the generation band was accomplished in a wider region, 427-453 nm. Solutions of mixtures of coumarins are suggested to obtain laser radiation in the widest possible spectral region.

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USSR

UDC 621.373:530.145.6

KALOSHA, I. I., TOLKACHEV, V. A.

"Some New Emitting Solutions of Complex Molecules and Their Peculiarities"

Zh. prikl. spektroskopii (Journal of Applied Spectroscopy), 1971, 14, vyp. 3, pp 537-539 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D126)

Translation: The article is a report on emission obtained on eight complex organic solutions: 6-dimethylamino-1,2-benzophenazine (I), ß-dinaphthylene oxide (II), 1,8-naphthoylene-1,2-benzimidazole (III), 2-phenyl-4-paradimethylaminostyryl-5,6-benzoquinoline (IV), benzanthrone (V), N-methylacridone (VI), perylene (VII) and 5-phenylacridine (VIII). Of these, I-IV are among compounds previously known with respect to emission. Data are given on the emission waves in various solvents. It is noted that the solvent has a strong effect on the position of the fluorescence spectrum and emission spectrum of molecules of (I). On the other hand, the solvent has a minimum effect on the spectra and emission of (II), whose emission is located at a wavelength of 375 nm. Pumping was done by the second harmonic of a ruby laser on a wavelength of 347 nm. One illustration, one table, bibliography of eight titles. Resumé.

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UNCLASSIFIED

021

TITLE--EFFECT OF THE T YIELDS S CONVERSION ON THE LUMINESCENCE OF COMPLEX MOLECULAR VAPORS -U-

PROCESSING DATE--20NOV70

AUTHOR--TOLKACHEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 658-61

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MATHEMATIC ANALYSIS, LUMINESCENCE, ALUORESCENCE, VAPOR STATE, PHOSPHORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1416

STEP NO--UR/0048/70/034/003/0658/0061

CIRC ACCESSION NO--AP0133368

UNCLASSIFIED

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0133368 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DETAILED MATH. TREATMENT IS GIVEN OF THE EXCITATION AND QUANTUM YIELD OF FLUORESCENCE, ALPHA PHOSPHORESCENCE, AND BETA PHOSPHORESCENCE DUE TO THE NEIGHBORING TRIPLET AND EXCITED SINGLET LEVELS WITH MUTUAL INTERCOMBINATION CONVERSION.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320004-5"

Acc. Nr. AP0050719 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code 4R0368

105598r Spectral method for measuring the duration of the fluorescence of rarefied vapor. Tolkachev, V. A. (USSR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 151–2 (Russ). From measurements of fluorescence intensity under steady-state conditions of excitation and under non-stationary conditions following cessation of excitation, it was possible to find the spectral dependence of the mean fluorescence lifetime τ of mols. The error in the detn. of τ is detd. by the error in the detn. of fluorescence intensity. The important equations are given. M. Tichy

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REEL/FRAME
19810717

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USSR

GRIGOLYUK, E. I., TOLKACHEV, V. M., Moscow

"Contact Problem for A Semi-Infinite Cylindrical Shell"

Moscow, Prikladnaya matematika i mekhanika, No. 5, Sep/Oct 71, pp 831-839

Abstract: The problem of the impression of sharp dies in a semi-infinite cylindrical shell that is freely supported at the end over segments in the vicinity of a transverse cross section is discussed. The edges of the dies are assumed to be absolutely rigid and of constant radius and do not have sharp angles. The effect of the end of the shell on the character of the change in the reaction of the dies is investigated. The problem is solved using the equations of the theory of shells constructed on the basis of the Kirchhoff-Love hypothesis. Friction between the surface of the shell and the edges of the dies is not considered. Some numerical results obtained on the BESM-4 computer are also given. Analysis of the equations obtained shows that there is an unlimited rise in the reaction at the end of the zone of contact and this is attributed to hypotheses applied in the theory of shells, such as the hypothesis of straight normals and the hypothesis of the absence of compression of layers of the shell in the direction of the normal. It is pointed out here that the

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USSR

GRIGOLYUK, E. I., TOLKACHEV, V. M.

"The Equlibrium of Shells of Revolution, Loaded Along the Meridian"

Moscow, Mekhanika Tverdogo Tela, No 3, 1970, pp 15-21

Abstract: Approximate formulas for determining the stressed state of thin elastic isotropic shells are obtained by the asymptotic method. The shells are described along second-order curves, and are loaded with assigned linear accelerations along a line that coincides with the meridian.

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USSR

UDC 547.415.1+547.298.1

TOLKACHEV, V. N., MIROPOL'SKAYA, M. A., and SAMOKHVALOV, G. I., All-Union Vitamin Scientific Research Institute

"Lipids With a Phosphamide Bond. II. Synthesis of N-Palmitoyl-N'-(O-β--trimethylammonioethylphosphoryl)putrescine Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 454-456

Abstract: As a stage in development of a scheme for synthesizing choline phosphamide of monoacetylputrescine, the authors describe synthesis of N-palmitoyl-N'-(O-β-trimethylammonioethylphosphoryl)putrescine chloride, one of the representatives of polyamines which contain the phosphamide bond.

USSR

TOLKACHEV, V. N., et al., Zhurnal Obshchey Khimii, Vol 42(103, No 2, Feb 72, pp 454-456

$$CH_3CONH(CH_2)_4NH_2 \xrightarrow{} \underset{I}{CH_3CONH(CH_2)_4NHC(C_6H_5)_3} \xrightarrow{} \underset{II}{}$$

$$\xrightarrow{} \underset{III}{C_{15}H_{31}CONH(CH_2)_4NHC(C_6H_5)_3} \xrightarrow{} \underset{IV}{C_{15}H_{31}CONH(CH_2)_4\overset{+}{N}H_3\ Cl^-} \xrightarrow{}$$

$$\xrightarrow{} C_{15}H_{31}CONH(CH_2)_4NH\underset{\underset{OC_6H_5}{|}}{\overset{\overset{O}{\uparrow}}{P}}OCH_2CH_2Cl \xrightarrow{}$$

V

$$\xrightarrow{} C_{15}H_{31}CONH(CH_2)_4NH\underset{\underset{OC_6H_5}{|}}{\overset{\overset{O}{\uparrow}}{P}}OCH_2CH_2\overset{+}{N}(CH_3)_3\ \ Cl^- \xrightarrow{}$$

VI

$$\xrightarrow{} C_{15}H_{31}CONH(CH_2)_4NH\underset{\underset{OBa_{1/2}}{|}}{\overset{\overset{O}{\uparrow}}{P}}OCH_2CH_2\overset{+}{N}(CH_3)_3\ \ Cl^-$$

VII

2/3

USSR

TOLKACHEV, V. N., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 454-456

The reaction utilizes the monotrityl derivative of putrescine obtained from N-acetylputrescine by a method analogous to that developed for synthesizing subaphilin. Removal of the acetyl radical by alkaline hydrolysis frees one amide group, and subsequent treatment with palmitic acid chloride yields N-palmitoyl-N' -trityl derivative. Removal of the trityl block with 50% acetic acid and condensation of the monopalmitoylputrescine with β-chloroethylphenylphosphoryl chloride and then with trimethylamine leads to a quaternary ammonium salt. Hydrolysis in alkaline conditions yields the end product in the form of a barium salt.

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USSR

UDC 621.398

SVIRIDOV, V. V., YEVTUSHENKO, I. N., and TOLKACHEV, V. YU.

"Choice of the Optimal Distribution Function in a Remote Information System for the Operational Collection of Integral Information"

V sb. Avtomatiz. sistemy upravleniya (Automated Management Systems--collection of works), Cheboksary, 1973, pp 9 - 16 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A467)

Translation: A calculation and choice of optimal distribution of primary integral information processing functions for a fixed structure and arrangement of a remote information system are carried out. Three variations of centralization are compared on a combination of information and cost characteristics, using a vector preference criterion. One illustration, one table, six bibliographic citations.

Abstract by the authors.

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USSR

UDC 632.95

(2)

ZIYAYEV, A. A., OTROSHCHENKO, O. S., SADYKOV, A. S., TOLKACHEVA, G. A., AKBAROV, KH. A., and KHODZHAYEVA, T. A.

"A Method of Making β-β'-Di-[piperidyl-2- (or 1-Methylpiperidyl-2)] Disodium- γ, γ'-Dihydrodipyridyl Carbamate"

USSR Author's Certificate No 343975, filed 13 Jul 70, published 14 Aug 72 (from RZh-Khimiya, No 10, May 73, Abstract No 10N614P by N. V. Lebedeva)

Translation: β, β'-Di-(piperidyl-2)-disodium-γ, γ'-dihydrodipyridyl carbamate (I) and β, β'-di-(1-methylpiperidyl-2)-disodium- γ, γ'-dihydrodipyridyl carbamate (II) are synthesized by reacting anabasine (III) or N-methylanabasine (IV) respectively with dispersed metallic sodium in an organic solvent in a molecular nitrogen atmosphere at 50-60°C. Example: 50 g of III or IV are added to a suspension of 10 g of Na in PhMe, the reaction mass is agitated in a stream of N_2 at 50-60°C until the sodium dissolves, and treated with CO_2. The resultant mass is evaporated, the residue is washed with n-hexane and filtered giving compound I or II with a yield of 90%, the melting point of I is above 400°C, molecular weight 458; the melting point of II is above 400°C, molecular weight 486. The values of R_f are given for I and II as well as IR-spectral data. I and II can be used as herbicides, and 1/2

USSR

(2)

ZIYAYEV, A. A., et al., USSR Author's Certificate No 343975, filed 13 Jul 70, published 14 Aug 72

also in synthesizing mono- and polyesters containing physiologically active fragments in the macromolecule.

2/2

USSR

TOLKACHEVA, I. T., Order of Lenin State Conservatory im. P. I. Chaykovskiy

"Effect of Physical Exercise on the Speed and Accuracy of Musicians' Voluntary Movements"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 5, 1971, pp 59-61

Abstract: Two tests were given to 156 music students to determine the speed and accuracy of their motor responses to various kinds of exercise (calisthenics, skiing, swimming, etc.). One test involved placing as many dots as possible within 10 sec in the center of a 5-mm square on a sheet of millimeter paper (a dot more than 1.5 mm away from the center was regarded as an error). The other test required playing a scale as quickly and flawlessly as possible. The results showed that after any kind of exercise, the subjects put down more dots than they did before the exercise, although they made more errors (statistically insignificant). For example, the girls' motor responses were 35% and 20% faster after track and field athletics and calisthenics, respectively, while the boys' rate of movement was 23% faster after skiing. In the musical experiment, the tempo of scale playing was significantly accelerated by exercise without an increase in the number of mistakes.

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USSR

UDC 632.95

KONASHEVICH, V. A., Chief of the Division of Control, Main Administration of Plant Protection, Ministry of Agriculture RSFSR; and TOLKACHEVA, M. S., Chief Chemist, Main Administration, State Commission on Chemical Agents

"Granulated Insecticides"

Moscow, Zashchita Rasteniy, No 5, May 73, pp 30-31

Abstract: The action of granulated insecticides that are to be applied to the soil is exerted in the zone in which seeds or recently germinated seeds are located. The superphosphate contained in these insecticides strengthens the young plant and makes it more resistant to pests. Among the granulated insecticides is 2% large-grained gamma-hexachlorocyclohexane (HCCH) that consists of 95% granulated superphosphate which is coated with 2-2.6% gamma-HCCH by means of 2.5% methylnaphthalene fraction acting as a solvent for the HCCH. It is used mainly for the protection of grain cultures. The 2% fine-grained gamma-HCCH is similar in composition, but the grain size is smaller (0.25-2 vs 0.5-3 mm). The 4% fine-grained gamma-HCCH contains 5% gamma-HCCH, 5% methylnaphthalene fraction, and 90% ordinary or ammonized superphosphate. Its

USSR

KONASHEVICH, V. A., and TOLKACHEVA, M. S., Zashchita Rasteniy, No 5, May 73, pp 30-31

principal use if protection of cotton plant shoots against larvae of the turnip moth. 1.6% granulated phosphamide is ammonized superphosphate (grain size 1-2 mm) that contains 1.6-1.8% of the systemic insecticide phosphamide (rogor). It is recommended for the protection of sugar beets, feed cruciferae crops (turnips and swede), and alfalfa. Phosphamaan is similar, except that 1% gamma-HCH has been added to increase the effectiveness.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PHASE EQUILIBRIUM IN A VINYL ACETATE ACETIC ACID WATER SYSTEM AT ATMOSPHERIC PRESSURE -U-

AUTHOR-(04)-TIKHONOVA, N.K., TIMOFEYEV, V.S., SERAFIMOV, L.A., TOLKACHEVA, N.L.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 175-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, VINYL COMPOUND, ACETATE, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0791 STEP NO--UR/0153/70/013/002/0175/0177

CIRC ACCESSION NO--AT0132889

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIL. COMPNS. IN THE 2 LIQ. PHASE REGION AND ALONG THE BINODAL SOLY. CURVE FOR THE TERNARY SYSTEM VINYL ACETATE HOAC-H SUB2 O ARE GIVEN FOR 13 POINTS AT 20DEGREES, AND FOR 11 POINTS AT THE B.P., AND A TERNARY ISOTHERMAL ISOBARIC DIAGRAM IS PRESENTED. VAPOR LIQ. EQUIL. AND B.PS. ARE ALSO GIVEN FOR 27 TERNARY MIXTS. AT ATM. PRESSURE. THE SYSTEM IS DEFINED AS TYPE 4ALPHA CLASS I ACCORDING TO THE CLASSIFICATION METHOD OF GURIKOVA, AND THE CONCN. TRIANGLE IS SEPD. INTO 2 RECTIFICATION REGIONS.

FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.391.82

TOLKALIN, L. N., ANTONOV, A. A.

"Selective Reception of a Complex Signal"

Vopr. radiotekhniki —Vsb.(Problems of Radio Engineering -- collection of works), Tula, Tula Polytechnical Institute, 1970, pp 105-112 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A94)

Translation: The probability of reception of a signal with Rayleigh amplitude distribution of the envelope and exponential distribution of the multiplicative clipped noise durations during selective reception for a finite time is determined. The problem of organizing the signal selections is investigated.

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USSR

UDC 621.372.5

TOLKALIN, L. N., KUKOL'NITSKIY, A. F., YUR'YEV, YU. N.

"Phase Filter with Corrected Characteristic"

Vopr. radiotekhniki --V sb(Problems of Radio Engineering -- collection of works), Tula, Tula Polytechnical Institute, 1970, pp 98-105 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A146)

Translation: The possibility of expanding the phase characteristic band of a phase filter is investigated. Methods of practical realization of the filter with a corrected characteristic are proposed, and the circuit elements are presented.

1/1

USSR

TOLKALIN, L. N., BAZHEV, V. M. UDC 621.391:519.2

"Some Characteristics of Reception of Discrete Radio Signals with Carrier Frequency Multiplication"

Vopr. radiotekhniki—V sb.(Problems of Radio Engineering — collection of works), Tula, Tula Polytechnical Institute, 1970, pp 112-120 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A92)

Translation: The operating characteristics of discrete signal carrier frequency multipliers of a receiver with a linear and quadratic amplitude characteristic of the nonlinear element are investigated. Transmission of "pure" noise and noise in the form of interference is analyzed.

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USSR

UDC: 612.826+612.825.1

TOLKUNOV, B. F., Laboratory of Comparative Physiology of the Central Nervous System (Headed by A. I. Karamyan), I. M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Leningrad

"Evoked Potentials of the Caudate Nucleus in Cortical Stimulation of the Ipsilateral Hemisphere in Monkeys"

Leningrad, Fiziologicheskiy zhurnal SSSR im. I. M. Sechenova, No 10, vol 58, 1972, pp 1476-1483

Abstract: Results are given of experiments performed on Macaca rhesus monkeys, animals with highly differentiated cortex of the large brain hemisphere and a well-expressed caudate nucleus which reaches its maximum development in this type of mammal. Fourteen of the monkeys were used as subjects, narcotized with urethane, with stereotaxic devices attached to the exposed hemisphere of the brain. The brain surface was covered with a thick layer of heated vaseline, and the dorsal surface of the cortex was stimulated by square electrical pulses of 0.1-0.5 ms duration and with an amplitude equal to twice the threshold value required to obtain evoked potentials in the caudate nucleus, the amplitude of

USSR

UDC: 621.826+612.825.1

TOLKUNOV, B. P., Fiziologicheskiy zhurnal SSSR im. I. M. Sechenova, No 10, vol 58, 1972, pp 1476-1483

the pulses amounting to 15-25 volts. The results of the experiments are analyzed, and oscillograms of the response potentials are shown. One of the conclusions drawn is that the response potentials of the Macaca rhesus are even more selectively organized than in subprimates, and are organized spatially.

2/2

USSR

UDC 612.825.4:612.826

TOLKUNOV, B. F., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Corticofugal Influences on Somatic Afferentation of the Caudate Nucleus in Monkeys"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 5, 1972, pp 1259-1262

Abstract: In chronic experiments on six rhesus monkeys, the dynamics of evoked potentials was traced in the head of the caudate nucleus following electrocutaneous stimulation of the extremities, with isolated reversible exclusion of the cortical representation of one of the extremities stimulated. The cortex was blocked by passing cold water through a plastic capsule implanted over the site of maximum intensity of the primary response to electrical stimulation. During cold inhibition of the cortical primary response to stimulation of any extremity, the caudate nucleus exhibited a decrease in amplitude of the evoked potential upon stimulation of the same extremity, but the evoked potential remained unchanged when other extremities were stimulated. Local heating of the cortex had the same effect. More superficial cooling of the cortex (to the stage of increase in amplitude of the primary response) did not prevent the appearance of evoked potentials in the caudate nucleus upon stimulation of the extremity

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USSR

TOLKUNOV, B. F., Doklady Akademii Nauk SSSR, Vol 205, No 5, 1972, pp 1259-1262

whose cortical projection was cooled, but it disrupted its dynamics. This evoked potential, unlike that following stimulation of the extremities with intact cortical representation, remained unchanged during the attention reaction. Thus, local cooling of a limited part of the cortex in the region of primary somatosensory projections selectively disrupts the conduction of afferent signals to the caudate nucleus from the part whose cortical projection was cooled.

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USSR

UDC 612.014.42

ZHURAVIN, I. A., and TOLKUNOV, B. F., Laboratory of Comparative Physiology of the Central Nervous System, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Use of Amplitude Analyzers for Time Analysis of the Impulse Activity of Neurons"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 6, Jun 70, pp 932-935

Abstract: Apparatus was devised for use in the time analysis of neuron impulse activity. An amplitude analyzer is used in which the principle of direct control of the regulating arrangement of a pulse analyzer by means of a clock and an external clearing pulse is used. A control assembly was designed for this apparatus which shapes counting pulses from neuron discharges and shapes clearing pulses.

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TOLMACH, I. M.

JPRS 60634
17 NOVEMBER 1973

(3)

POWERFUL DC CONDUCTION PUMP WITH INCREASED OPERATING VOLTAGE

[Abstract of a Paper by V. A. Goldnyak, A. Ye. Sinel'nikova, I. M. Tolmach
Given at the Magnetohydrodynamic Conference, pp 137-139]

As is known [1], the dc conduction pump with increased voltage permits the magnitude of the operating current to be reduced for a corresponding increase in the feed voltage (figure 1).

In the traditional dc conduction pump [2], part of the current flows around the zone of the strong magnetic field through the ends of the pump causing the so-called "boundary effect." On the basis of the characteristic features of the pump diagram with increased voltage, the boundary effect is absent; however, there is always a longitudinal useless current reducing the efficiency of the machine.

Figure 1.

A comparison of these two types of dc pumps with respect to the reduced negative effect of the boundary effect in one pump and the longitudinal current in the other pump will be of the same order.

The design of a powerful pump by the schematic presented in reference [1] has been developed which insures a linear head characteristic in the section ($24.5 \cdot 10^5$ n/m^2, 0.015 m^3/sec); ($14.7 \cdot 10^5$ n/m^2, 0.03 m^3/sec) for pumping liquid potassium at a temperature of 700°C.

TOLMACH, I. M.

(8)

JPRS 60634
27 November 1973

EXPERIMENTAL STUDY OF AN AC LIQUID-METAL CONDUCTION MACHINE

[Abstract of a Paper by Yu. A. Birkanov, L. G. Vlasenko, S. Ye. Dvorchik, Ya. Ya. Zandart, V. K. Makarovich, V. Ye. Strizhak, I. M. Tolmach, S. R. Troitskiy Given at the Magnetohydrodynamic Conference, pp 140-142]

A study was made of a high-temperature single-phase machine with a C-type magnetic excitation system, four pair-wise connected channels bifilar-arranged in the gap and also a Ш-type step-up transformer (Figure 1). The channels were executed from Kh18N10T steel 0.5 mm thick; they have a constant cross section with outside dimensions of 16.6 × 6.4 mm² and an active length of 250 mm. They are electrically connected to each other and to the sectional primary turn of the transformer (soldering the lateral faces). The flow of metal in each pair of channels is opposite. The machine has electrical insulation with thermal stability to 600°C, measuring turns for determining the magnetic fluxes and several thermocouples.

Depending on the operating mode in the experiment, various switchings of the windings were realized:

1). In the pump mode the excitation winding and the output winding of the transformer were fed from a constant energy source;

2). In the generator mode independently of the excitation, the excitation winding was fed from an outside source, and the transformer winding was connected to the useful load.

3) In the generator mode with self-excitation of the winding, the capacitance and the useful load were included according to the schema in Figure 1.

The studies were made on a sodium loop with a sodium temperature of 300-500 °C.

The characteristic features of the conduction machines of this type and, in particular, the characteristic features of the parallel hydraulic coupling of pairs of channels leading to spurious currents through the bypass loops of circuit from the sign-variable magnetic field were noted.

USSR

UDC: 621.313.29:538.4

GOLODNYAK, V. A., SINEL'NIKOVA, A. Ye., and TOLMACH, I. M.

"D-C Power Conduction Pump of Higher Operating Voltage"

Riga, Magnitnaya gidrodinamika, No 1, 1973, pp 117-121

Abstract: This paper is the outgrowth of a patent (I. M. Tolmach, Author's certificate No 232755 from 24/4/1967, Otkrytiya, izobreteniya, prom. obraztsy. tov. znaki, No 1, 1969) which proposed a d-c liquid metal conduction pump system having the distinctive feature of higher supply voltage at a reduced operating current. There are two such devices: one in which there is an edge effect, the other in which the edge effect does not exist. These types are compared in the present paper, their relative electromagnetic efficiencies estimated with their respective volumes and pressures considered to be equal. A table is given of the comparative parameters of both types of pump using liquid potassium at 700° C. The results of the comparison indicate that the pump with the edge effect has a higher efficiency than its rival but also has a higher operating current, 56 kA for the first and 14.8 kA for the second. Since this latter fact is a hindrance to the technical realization of the device, the second version is preferred.

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USSR

UDC 538.4

5

BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K., RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R., YANTOVSKIY, Ye. I.

"Experimental Study of Liquid-Metal Induction Machine in Pump Mode"

7-ye Soveshch. po Magnit. Gidrodinamike. T. 1 [Seventh Conference on Magnetic Hydrodynamics, Vol 1], Riga, Zinatnye Press, 1972, pp 20-23, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B43 by V. V. Blagov).

Translation: The operation of a liquid-metal induction machine in the pump mode was studied in a potassium circuit with a working pressure of up to 60 kg/cm^2. The working characteristics of the machine are presented for a temperature of 500°.

The experimental results allowed the relationship of the dimensionless criterion $\Pi = \Delta P V_s l/\sigma U^2$ to the velocity ratio $V/V_s = I - S$ to be established (where V_s is the synchronous speed of the rotating field, V is the velocity of the metal, ΔP is the pressure drop developed, S is the slipping, σ is the conductivity, U is the applied voltage). As the temperature changes from 1/2

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UDC 538.4

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BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K., RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R., YANTOVSKIY, Ye. I., 7-ye Soveshch. po Magnit. Gidrodinamike. T. 1, Riga, Zinatnye Press, 1972, pp 20-23.

280 to 500° and the voltage varies from 80 to 150 v, the dependence of Π on V/V_s is universal. The maximum head is produced at small flow rates, depends on the applied voltage and where T = 500° and ΔU = 150 v is about 37 kg/cm^2; the efficiency of the machine is about 24% under these conditions. Where T = 300°, these figures are 42 and 30% respectively. The total operating time of the machine was 120 hours.

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USSR

UDC 621.316.546:621.313.29:538.4

BOGUSLAVSKIY, V. A., TOLMACH, I. M., and YANTOVSKIY, YE. I.

"Study of the Commutation of a Strong Direct Current Using a Molten Metal in a Rotating Magnetic Field"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 95-101

Abstract: A unit for studying the commutation of strong currents with the aid of molten metal is described which consists of a non-conducting, hermetically sealed cyclinder partially filled with molten metal, electrodes inserted inside the cylinder and an external nonferrous inductor of the rotating field. When the inductor is switched on the molten metal is uncoiled and forms a rotating and conducting cylinder and closes the main circuit. Switching the inductor off leads to the fall of molten metal from the force of gravity and to a break in the circuit. Questions of comparing the linear device with centrifugal devices, determination of the maximum current of short circuiting and calculation of the nonferrous stator field are discussed. Experiments are described on a model of a switch with commutations of direct current up to 1000 a and a voltage of 220 v with forcing of the control voltage

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USSR

BOGUSLAVSKIY, V. A., et al., Magnitnaya Gidrodinamika, No 4, Oct-Dec 72, pp 95-101

during switch on and counter rotation of the field upon switch off. S. Ye. Dvorchik and V. N. Firsov assisted in conducting the experiments. 6 figures, 6 bibliographic references.

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USSR

UDC 621.31:538.4

YANTOVSKIY, YE. I., and TOLMACH, I. M.

Magnitogidrodinamicheskiye Generatory (Magnetohydrodynamic Generators), Izdatel'stvo Nauka, Moscow, 1972, 424 pp

Translation of Foreword: The MHD power generation problem is one of the leading in power engineering because this method of electrical energy production has many economical and technological advantages. The most detailed studies of MHD have been carried out in the USSR and USA where experimental units operate on combustion products with potassium additives. A powerful MHD generator at the Institute of Power Engineering imeni G. M. Krzhizhanovskiy can be mentioned as an example. Designing and building of this generator, as well as of many others, especially those operating on liquid metals, were preceded by many studies that lasted for many years. The authors of this book contributed substantially to the design of the above MHD generator.

The many technological difficulties encountered in MHD power generation on an industrial level should not weaken the efforts of researchers because MHD generators are the most promising means for energy conversion, and they are capable of producing electrical power comparable to convenient power plants.

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USSR

YANTOVSKIY, YE. I., and TOLMACH, I. M., Magnetohydrodynamic Generators, Izdatel'stvo Nauka, Moscow, 1972, 424 pp

If we trace back the historical development of the gas turbine, which can be roughly compared with the MHD generator, we can distinguish three basic stages: designing the turbine by P. D. Kuz'minskiy in 1892, application of gas turbines in the aviation industry in 1945, and completion of the powerful gas turbine power station at the Krasnodar Thermoelectric Power Plant in 1970.

Analogously with gas turbine development, it can be predicted that a powerful MHD power generating plant will be built not sooner than 15-20 years from now, provided the new energy production method is actively pursued in the future. The design of the U-25 experimental industrial pilot unit by the Institute of High Temperatures of the Academy of Sciences USSR was an important step in the right direction.

It is quite possible that MHD generators will appear much sooner as sources of energy for space research.

This book should occupy an important place among numerous publications devoted to individual aspects, as well as to the general MHD problem, because of a systematic and broad coverage of theoretical problems combined with the design aspects of the MHD generators.

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USSR

YANTOVSKIY, YE. I., and TOLMACH, I. M., Magnetohydrodynamic Generators, Izdatel'stvo Nauka, Moscow, 1972, 424 pp

As a result of long-lasting research on the subject, the authors formed a definite point of view regarding the advantages of MHD generators operating on combustion products (loop-type). Liquid metals will be best suited for alternating current generators. The final selection of the type of generator will be decided by experiments.

This book will be of interest to researchers, engineers, and students because it covers broad aspects of hydrodynamic generators andpresents definite conclusions about each topic.

Table of Contents:

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USSR

Power

UDC [621.362:538.45-16:669-404.001.4

ALAD'YEV, I. T., MUKHIN, V. A., STRIZHAK, V. Ye., TEPLOV, S. V., TOLMACH, I. M.

"Experimental Study of a DC MHD Machine With Sectionalized Electrodes"

Magnitn. gidrodinamika (Magnetohydrodynamics), 1971, No 1, pp 64-72 (from RZh-Elektrotekhnika i Energetika, No 9, Sep 71, Abstract No 9A98)

Translation: A working model of a DC MHD machine with sectionalized electrodes is made and experimentally studied on a potassium loop to check the theory and procedure of calculating MHD devices of this type. The study was done for pump and generator operating modes. The following characteristics were obtained in one of the pumping modes: molten potassium temperature 160°C, voltage applied across the channel 1.1 V, developed head 4.05 atmospheres, flow rate 0.15 kg/s, efficiency 7%. The following characteristics were obtained in one of the generator modes: potassium temperature 255°C, voltage across the load 0.4 V, load current 90 A, flow rate 0.356 kg/s, pressure drop 7.2 atmospheres, efficiency 6.2%. The method of calculation is outlined. An advantage

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USSR

ALAD'YEV, I. T. et al., Magnitn. gidrodinamika, 1971, No 1, pp 64-72

of the proposed scheme is the possibility of an appreciable increase in working voltage and reduction in current as compared with traditional circuits. For instance in the anticipated intense pumping mode of the working model, the following indices may be achieved: voltage across the terminals 5 V, developed pressure drop 25 atmospheres, potassium flow rate 0.75 kg/s, efficiency 11%. The proposed scheme with sectionalized electrodes is used for high-pressure pumps with relatively low flow rates. Eight illustrations, bibliography of four titles.

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USSR

GOLODNYAK, V. A., SINEL'NIKOVA, A. Ye., TOLMACH, I. M.

"A High-Power Direct Current Conduction Pump with High Operating Pressure"

7-ye. Soveshch. po Magnit. Gidrodinamike. T. 1. [Seventh Conference on Magnetic Hydrodynamics, Vol 1 -- Collection of Works], Riga, Zinatnye Press, 1972, pp 137-139, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B133, by A. E. Mikel'son).

Translation: A description is presented of a pump planned by the author's for liquid potassium with the following parameters: $P = 17.6 \cdot 10^5$ n/m^2, $Q = 0.03$ m /sec, $I = 14{,}870$ a, $U = 15.2$ v, $B = 0.25$ tesla, $\eta = 25\%$. The total weight of the pump is 2.5 t (1.9 t being the weight of the magnetic system). The pump operates on the principle of successive transmission of current through individual working zones located along a street channel. The pump has practically no edge effect, but a longitudinal parasitic current always exists in the pump, reducing its effectiveness.

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USSR

UDC 547.558.1

ZHMUROVA, I. N., TOLMACHEV, A. I., YURCHENKO, R. I., and SLOMINSKIY, Yu. L., Institute of Organic Chemistry, Ukrainian Academy of Sciences

"The Auxochromic Action of the Phosphazo Group"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2553-2557

Abstract: In various symmetrical and asymmetrical thiacarbocyanines, styryls and merocyanines tested, it was found that the triphenylphosphazo group has the same auxochromic effect as the dimethylamino group.

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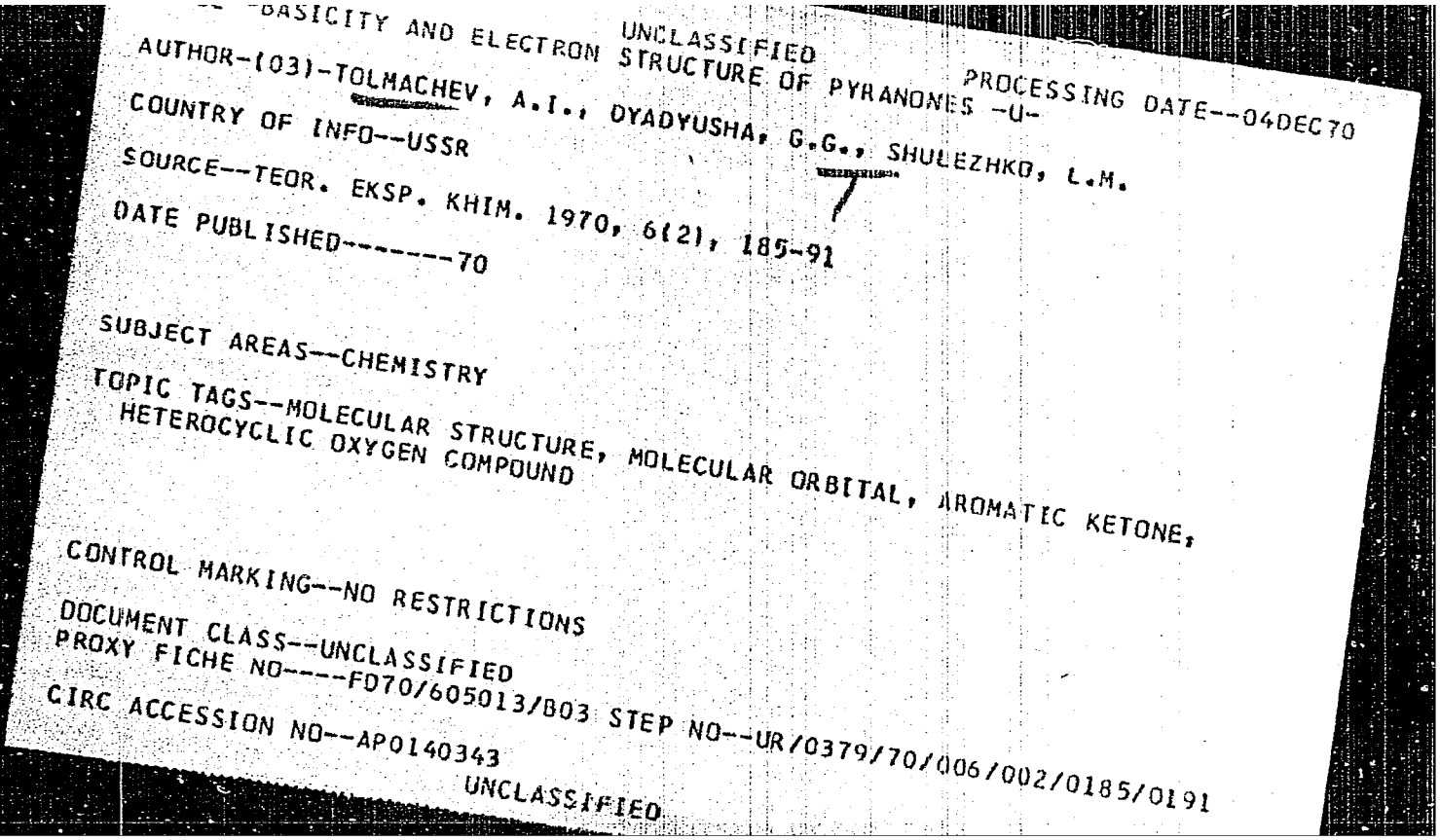


UNCLASSIFIED PROCESSING DATE--04DEC70

-- BASICITY AND ELECTRON STRUCTURE OF PYRANONES -U-

AUTHOR-(03)-TOLMACHEV, A.I., OYADYUSHA, G.G., SHULEZHKO, L.M.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(2), 185-91

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, MOLECULAR ORBITAL, AROMATIC KETONE, HETEROCYCLIC OXYGEN COMPOUND

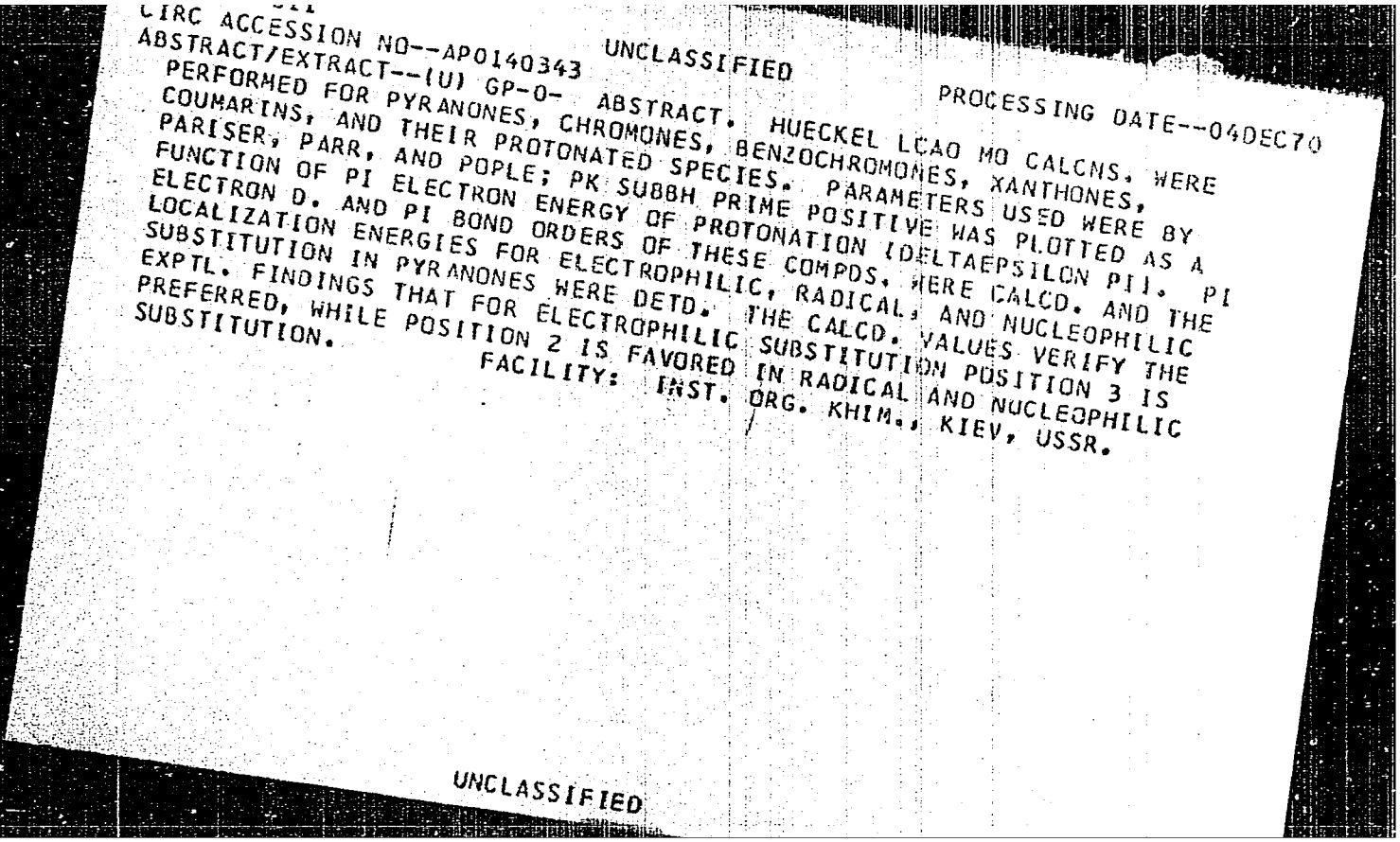
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/B03 STEP NO--UR/0379/70/006/002/0185/0191

CIRC ACCESSION NO--AP0140343

UNCLASSIFIED

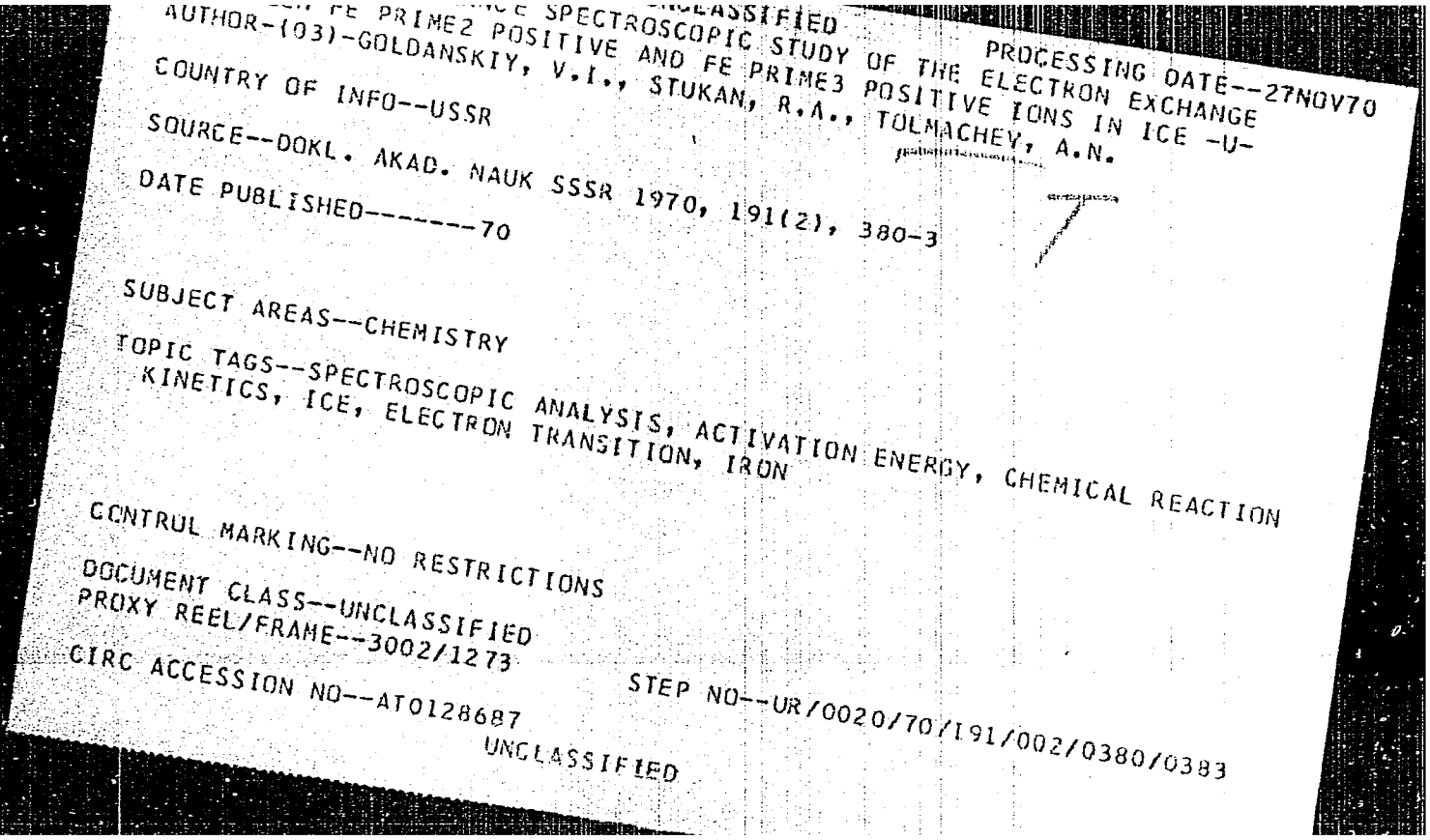


CIRC ACCESSION NO--AP0140343 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HUECKEL LCAO MO CALCNS. WERE PERFORMED FOR PYRANONES, CHROMONES, BENZOCHROMONES, XANTHONES, COUMARINS, AND THEIR PROTONATED SPECIES. PARAMETERS USED WERE BY PARISER, PARR, AND POPLE; PK SUBBH PRIME POSITIVE WAS PLOTTED AS A FUNCTION OF PI ELECTRON ENERGY OF PROTONATION (DELTAEPSILON PI). PI ELECTRON D. AND PI BOND ORDERS OF THESE COMPDS. WERE CALCD. AND THE LOCALIZATION ENERGIES FOR ELECTROPHILIC, RADICAL, AND NUCLEOPHILIC SUBSTITUTION IN PYRANONES WERE DETD. THE CALCD. VALUES VERIFY THE EXPTL. FINDINGS THAT FOR ELECTROPHILIC SUBSTITUTION POSITION 3 IS PREFERRED, WHILE POSITION 2 IS FAVORED IN RADICAL AND NUCLEOPHILIC SUBSTITUTION.

FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ESR SPECTROSCOPIC STUDY OF THE ELECTRON EXCHANGE FE PRIME2 POSITIVE AND FE PRIME3 POSITIVE IONS IN ICE -U-

AUTHOR-(03)-GOLDANSKIY, V.I., STUKAN, R.A., TOLMACHEV, A.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 380-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROSCOPIC ANALYSIS, ACTIVATION ENERGY, CHEMICAL REACTION KINETICS, ICE, ELECTRON TRANSITION, IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1273

CIRC ACCESSION NO--AT0128687

STEP NO--UR/0020/70/191/002/0380/0383

UNCLASSIFIED

USSR

TOLMACHEV, A. V.

UDC 534.322.3+534.83

"Study of Noise Emitted by the Initial Segment of a Smooth Straight Pipe of Circular Cross Section"

V sb. Materialy Nauchn. konferentsii molodykh nauchn. rabotn. NII stroit. fiz. Gosstroya SSSR. Otd. inform.-izdat. i patentno-litsenz. raboty, 1970 (Materials of the Scientific Conference of Young Scientific Workers of the Scientific Research Institute of Structural Physics of Gosstroy USSR. Department of Information-Publishing and Patent-License Work, 1970 -- Collection of Works), Moscow, 1970, pp 100-106 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12Zh769)

Translation: A qualitative analysis is made of the noise emitted by the initial segment of a smooth straight cylindrical pipe with an even input. A formula is obtained for determining the total level of sound intensity of noise emitted by the pipe if its diameter D and the flow rate v are known; a method for approximately determining the sound intensity spectrum is also proposed. Abstract.

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2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0128687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON EXCHANGE BETWEEN FE PRIME2 POSITIVE AND FE PRIME3 POSITIVE IN ICE WAS STUDIED AT MINUS 195 TO MINUS 78DEGREES BY USING THE METHOD OF GAMMA RESONANCE SPECTROSCOPY ANALYSIS IN THE TRACER ATOM METHOD. THE EXCHANGE WAS STUDIED BY USING FE(CLO SUB4) SUB2 SOLNS. HAVING A NORMAL CONCN. OF PRIME57 FE AND FE SEXTILE (CLO SUB4) SUB3 SOLNS. ENRICHED TO 91PERCENT IN PRIME57 FE. THE EXCHANGE TAKES PLACE WITH A NOTICEABLE RATE AT MINUS 114DEGREES. KINETICS OF THE EXCHANGE REACTION WERE STUDIED AT DIFFERENT TEMPS. AND THE REACTION RATE CONSTS. WERE DETD. AND TABULATED. THE ACTIVATION ENERGY FOR THE EXCHANGE REACTION IS 7.6 PLUS OR MINUS 0.5 KCAL-MOLE.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320004-5"

USSR

TOLMACHEV, A. V., YUDIN, YE. YA.

UDC 534.322.2+534.83

"Study of Noise Generated by Throttling and Regulating Devices in Air Ducts"

Nauchn. tr. NII stroit. fiz. Gosstroya SSSR (Scientific Works of the Scientific Research Institute of Structural Physics of Gosstroy USSR), 1970, No 1(13), pp 81-94 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh775)

Translation: A study of noise emitted by throttling devices placed in air ducts is discussed. The experimental setup was described previously by the authors (see RZh-Fizika, 1968, 12Zh634). It is evident from the relationships obtained for the spectrum of the emitted noise that the high-frequency components rise with an increase in flow rate and the noise drops with an increase in the area of the opening. To reduce noise in throttling, it is recommended that devices be supplied with a centrally located opening. Typical relationships for the total levels of sound intensity of the noise are observed in two segments with proportionality laws of the 6th and 4th powers of the flow rate (see also RZhFiz, 1968, 11Zh421). Several mechanisms are proposed for explaining the 4th power law.

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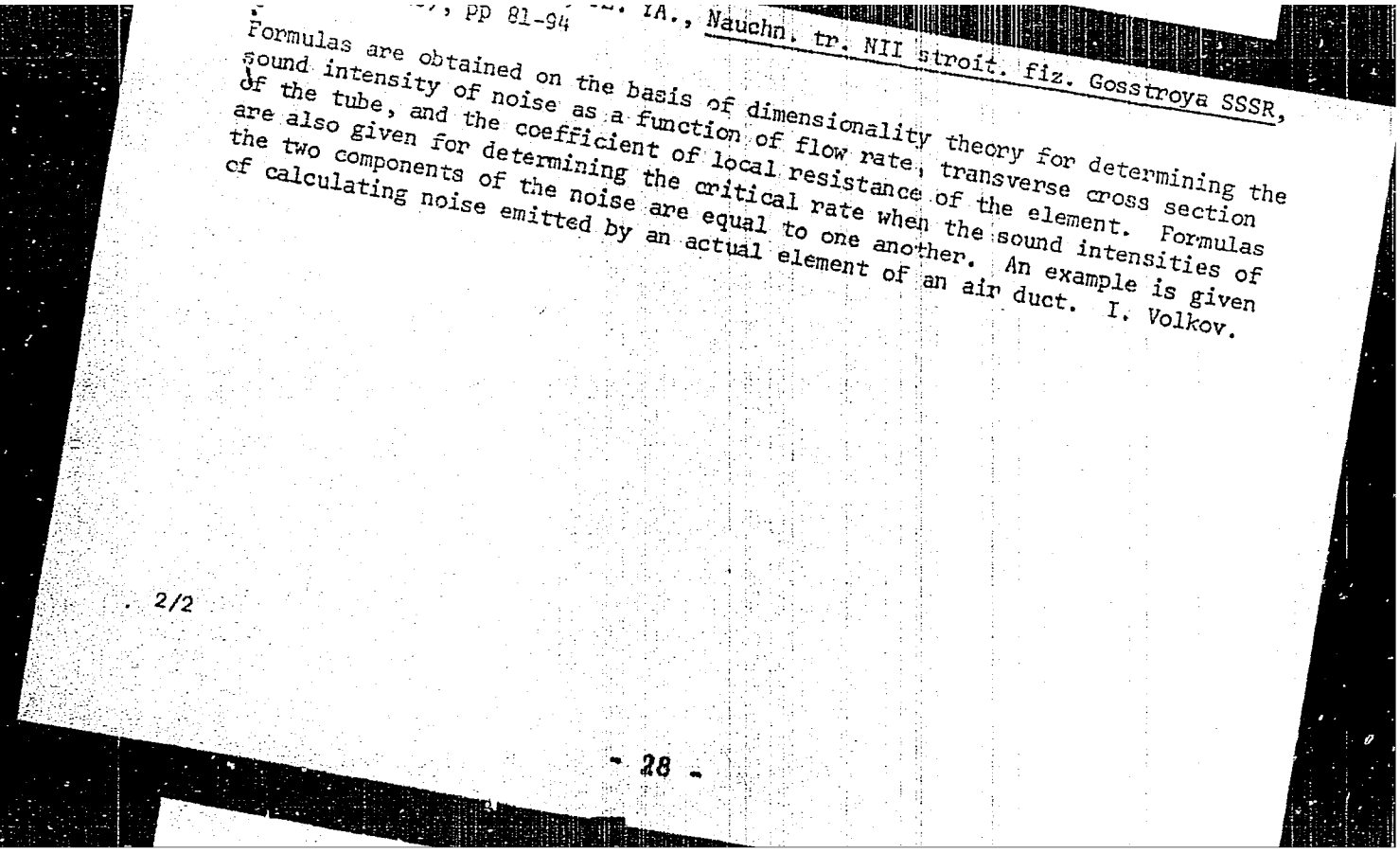

, pp 81-94 IA., Nauchn. tr. NII stroit. fiz. Gosstroya SSSR,

Formulas are obtained on the basis of dimensionality theory for determining the sound intensity of noise as a function of flow rate, transverse cross section of the tube, and the coefficient of local resistance of the element. Formulas are also given for determining the critical rate when the sound intensities of the two components of the noise are equal to one another. An example is given of calculating noise emitted by an actual element of an air duct. I. Volkov.

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USSR

TOLMACHEV, B. M., Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

UDC 681.14

"The Design of Automatic Speed Control Systems With Unitary Code Pick-ups"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Priborostroyeniye, Vol 13, No 4, 1970, pp 38-42

Abstract: One of the ways to construct digital meters is to count the fixed-frequency pulses from a standard quartz generator for the time interval between two or more pulses from a unitary code pick-up. The speed in such a measurement method can be controlled by controlling the time pause between the pulses of the pickup. The article considers such systems without allowance for quantization for the level resulting from the digital method of time-interval measurement. Systems of this type fall in the category of automatic control systems with integral pulse-frequency modulation. It is shown that such systems

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TOLMACHEV, B. M., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Priboro-stroyeniye, Vol 13, No 4, 1970, pp 38-42

In the neighborhood of the image point corresponding to undisturbed stable system motion can be regarded as pulse systems. The usual methods of linear pulse system theory, particularly the z-transform method, are used to analyze the stability of such systems.

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UNCLASSIFIED

TITLE--AQUEOUS PRIMING COMPOSITION BASED ON MICROGELS OF PYRIDINE CONTAINING COPOLYMERS -U-

PROCESSING DATE--04DEC70

AUTHOR-(04)-TOLMACHEV, I.A., VERKOLANTSEV, V.V., TSALINGOLD, V.L., KOSMODEMYANSKIY, L.V.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (2), 36-40

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FLUID VISCOSITY MEASUREMENT, PYRIDINE, COPOLYMER, STYRENE, GEL, RUBBER/(U)SKS65MVP10 SYNTHETIC RUBBER

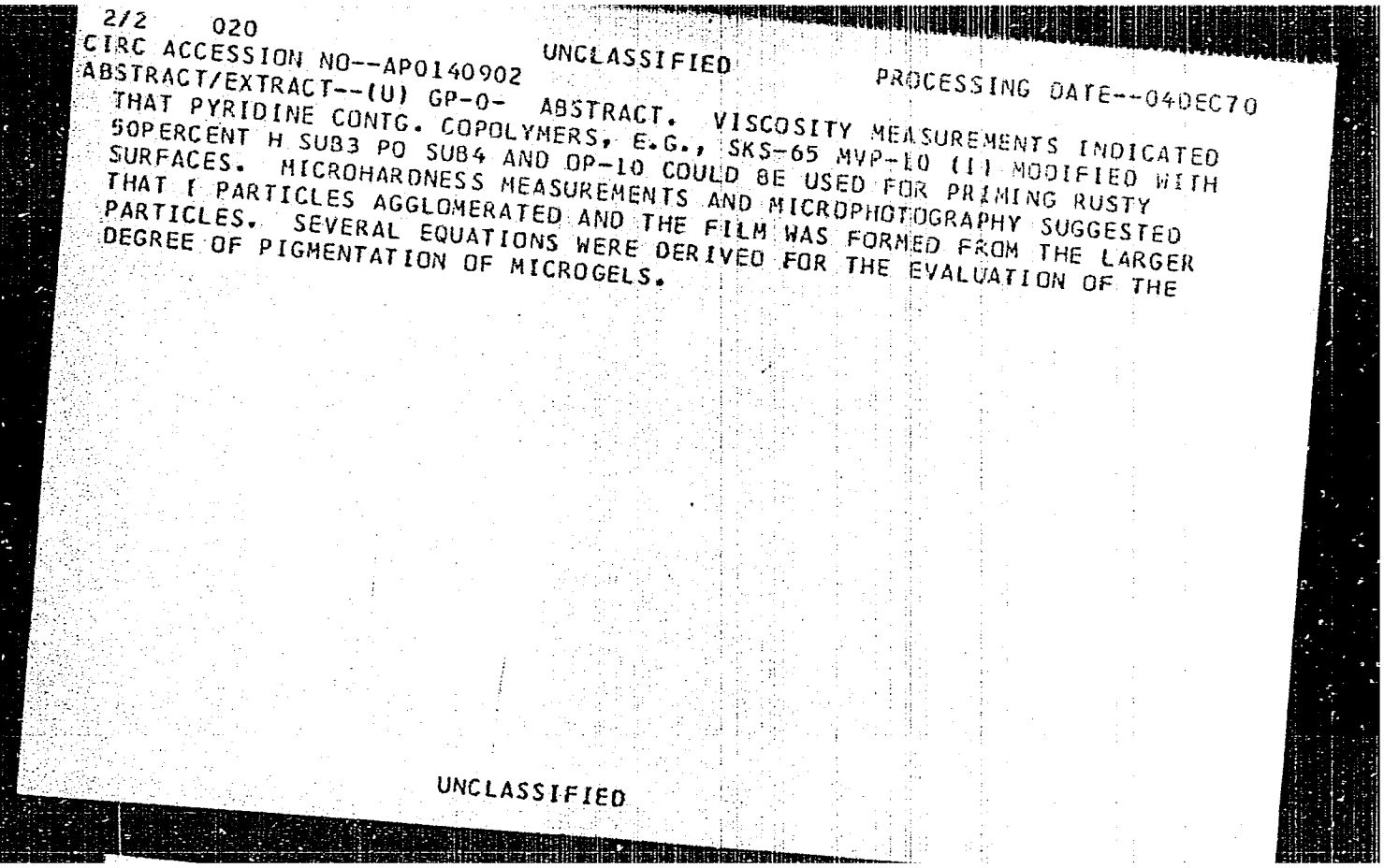
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/B07 STEP NO--UR/0303/70/000/002/0036/0040

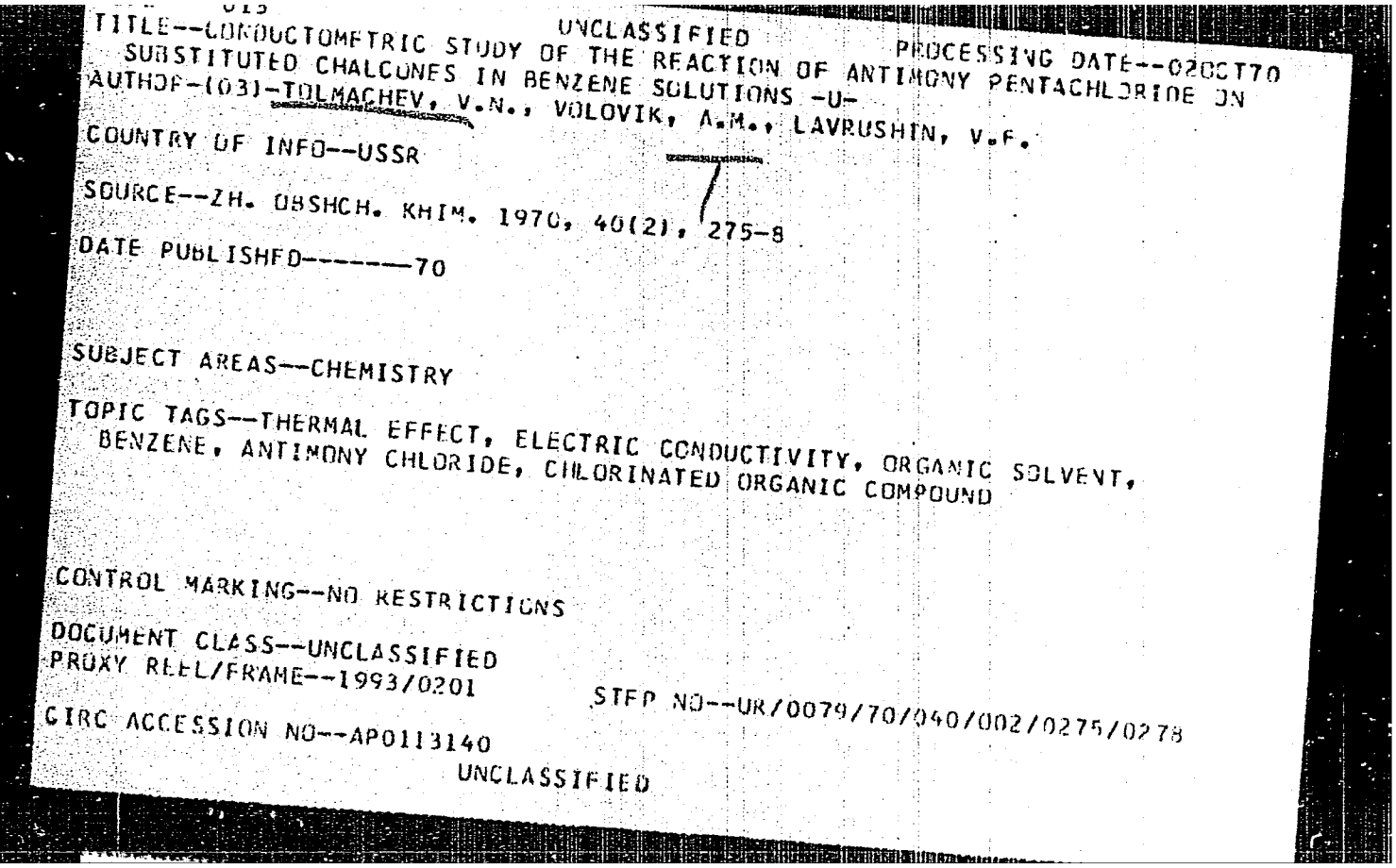
CIRC ACCESSION NO--AP0140902

UNCLASSIFIED



2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140902
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSITY MEASUREMENTS INDICATED THAT PYRIDINE CONTG. COPOLYMERS, E.G., SKS-65 MVP-10 (1) MODIFIED WITH 50PERCENT H SUB3 PO SUB4 AND OP-10 COULD BE USED FOR PRIMING RUSTY SURFACES. MICROHARDNESS MEASUREMENTS AND MICROPHOTOGRAPHY SUGGESTED THAT I PARTICLES AGGLOMERATED AND THE FILM WAS FORMED FROM THE LARGER PARTICLES. SEVERAL EQUATIONS WERE DERIVED FOR THE EVALUATION OF THE DEGREE OF PIGMENTATION OF MICROGELS.

UNCLASSIFIED



UNCLASSIFIED

TITLE--CONDUCTOMETRIC STUDY OF THE REACTION OF ANTIMONY PENTACHLORIDE IN SUBSTITUTED CHALCONES IN BENZENE SOLUTIONS -U-

PROCESSING DATE--02OCT70

AUTHOR-(03)-TOLMACHEV, V.N., VOLOVIK, A.M., LAVRUSHIN, V.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 275-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL EFFECT, ELECTRIC CONDUCTIVITY, ORGANIC SOLVENT, BENZENE, ANTIMONY CHLORIDE, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0201

STEP NO--UR/0079/70/040/002/0275/0278

CIRC ACCESSION NO--AP0113140

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0113140

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COND. DATA ARE PRESENTED FOR 25, 35, AND 45DEGREES OF SYSTEMS OF SBCL SUB5 AND CHALCONES WITH MEO, ME, PH, H, CL, AND NO SUB2 SUBSTITUENTS IN VARIOUS POSITIONS RELATIVE TO THE CO GROUP. THE 1:1 AND 2:1 COMPLEXES ARE FORMED IN THESE BINARY SYSTEMS OF SBCL SUB5 CHALCONE. THE CONDS. OF THESE INCREASE WITH INCREASING TEMP. AND WITH INCREASING ELECTRON DONOR ABILITY OF THE SUBSTITUENTS IN ORDER: H, PH, ME, MEO. THE MOLAR COND. DATA CAN BE CORRELATED WITH THE TAFT POLAR SUBSTITUENT CONSTANTS.

UNCLASSIFIED

Acc. Nr: AP0049138 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0079

99693z Absorption spectra of complexes formed during the reaction of 4-substituted chalcones and methoxychalcones with antimony pentachloride in benzene. Lavrushin, V. F.; Yushko, V. K.; Tolmachev, V. N. (Khar'kov. Gos. Univ. im. Gor'kogo, Kharkov, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 156–60 (Russ). Absorption spectra were reported for $SbCl_5$ complexes of 18 chalcones *p*-$RC_6H_4CH{:}CHCOC_6H_4X$-*p* and *p*-$RC_6H_4{-}COCH{:}CHC_6H_4X$-*p* (R = H, or MeO; X = MeO, Me, Ph, H, Cl, or NO_2). The band displacements were correlated with the substituent consts. of R and X in C_6H_5 and were directly related to basicity of the ligand used and the strength of coordination bonds. The results were readily correlated by means of Brown-Okamoto equation.
G. M. Kosolapoff

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REEL/FRAME 19800944

AP0049137 - Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0079

99703c Spectrophotometric study of the formation of complexes by substituted methoxychalcones with antimony pentachloride in benzene solutions. Yushko, V. K.; Tolmachev, V. N.; Lavrushin, V. F. (Khar'kov. Gos. Univ. im. Gor'kogo, Kharkov, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 166–5 (Russ). Spectrophotometric data are shown graphically for the system $SbCl_5$ and *p*-$MeOC_6H_4CH{:}CHCOC_6H_4X$-*p* (I) (X = MeO, Me, Ph, H, Cl, or NO_2) and *p*-$MeOC_6H_4COCH{:}CHC_6H_4X$-*p* (II); the effect of *o*-substituents MeO or H in I was also exam'd. The system produced complexes with increasing stability (estd. stability consts. are tabulated) with 1:1 compn. as the following X were introduced: NO_2, Cl, H, Ph, Me, MeO. The value of the Hammett reaction const. was −1.44 for I and −0.63 II. Introduction of *o*-MeO groups had a hypsochromic effect on the spectra, esp. after introduction of the 3rd MeO group and the extinction coeffs. declined as the no. of *o*-MeO groups increases, indicating the importance of steric factors, and increasing noncoplanarity of the mols. I formed complexes with 2 moles Sb-Cl_5/mole ketone if the substituents were NO_2 or Cl in *p*-position. All others gave only equimolar complexes. G. M. Kosolapoff

REEL/FRAME
19800943

USSR

TOLMACHEV, V. P.

UDC 533.601.15

"Flow of a Supersonic Gas Stream Around a Blunt Body of Revolution"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1973, pp 95-97

Abstract: The author studies a motion equation for an axisymmetric gas flow using the assumption that flow velocity is linearly dependent on pressure. A simple relationship is obtained from a discontinuity equation which relates the coordinates of a point to the angle of inclination of the flow with respect to the axis of symmetry. This relationship makes it possible to determine the location of the shock wave during the flow of a supersonic gas stream around a blunt body. This makes it possible to determine the distribution of pressure between the shock wave and the body being streamlined. Using the obtained relationships, the author constructs a simple model for the flow of a supersonic gas stream around a blunt axisymmetric body. This model may be used for studying the flow of nonuniform gas stream around a blunt body.

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1/2 053 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--WAVE THEORY OF CROSS SECTIONS OF GAS PHASE SUBSTITUTION REACTIONS. I. DERIVATION OF A FORMULA FOR THE CROSS SECTIONS -U-
AUTHOR-(03)-LEVICH, V.G., BRODSKIY, A.M., TOLMACHEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 101-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIFFERENTIAL CROSS SECTION, QUANTUM MECHANICS, GAS KINETICS, WAVE FUNCTION, REACTION KINETICS, PERTURBATION METHOD, HAMILTONIAN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1419 STEP NO--UR/0456/70/004/002/0101/0107

CIRC ACCESSION NO--AP0118408

UNCLASSIFIED

2/2 053 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0118408
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW QUANTUM MECH. METHOD WAS DEVELOPED FOR THE CALCN. OF DIFFERENTIAL CROSS SECTIONS OF GAS PHASE SUBSTITUTION REACTIONS. THE REACTION WAS CONSIDERED AS A GENERAL SCATTERING PROCESS WITH A REDISTRIBUTION OF REACTING PARTICLES. THE DEPENDENCE OF THE CROSS SECTIONS ON ENERGIES AND ANGLES IS DETD. PRIMARILY BY THE OVERLAP INTEGRAL OF WAVE FUNCTIONS OF INITIAL AND FINAL STATES OF HEAVY PARTICLES. BY USING THE MEHTOD OF PERTURBED WAVES AND WITH A SPECIAL FORM OF THE HAMILTONIAN, EXPLICIT EXPRESSIONS FOR THE CROSS SECTIONS WERE OBTAINED. FACILITY: INST. ELEKTROKHIM., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AT0038048

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 264-280

ASYMPTOTIC BEHAVIOR OF THE CHARGE EXCHANGE CROSS SECTION

Brodskiy, A. M.; Potapov, V. S.; Tolmachev, V. V.

The asymptotic behavior of terms of the iteration expansion of the transition amplitude for reaction (1a) is studied for the extreme case of high relative velocities of the colliding particles. Asymptotic expressions are obtained for the total and differential cross sections. Some features which the Born approximation possesses when applied to rearrangement problems are noted.

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REEL/FRAME 19731091

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USSR

BLINOVA, N. I., RODIONOVA, L. P., and TOLMACHEV, YU. M.,

UDC 541.451:546.791

"Reactions of Mixed Uranium Oxides With Acids"

Leningrad, Radiokhimiya, Vol 12, No 6, 1970, pp 835-838

Abstract: When U_3O_8 is dissolved in acetic acid at 60°C in concentrations ranging from 0.3 to 17.2 M, the lower equilibrium oxide formed in 7.0 M CH_3COOH is $UO_{2.57}$. In perchloric acid U_3O_8 yields U_2O_5 ($UO_{2.50}$) as the lower equilibrium oxide in concentration range 0.25 to 2.0 N. When U_2O_5 is dissolved either in acetic or perchloric acid at 90°, the same oxides are formed as in the case of U_3O_8. Reaction of U_3O_8 with 1 N nitric acid at 40° or 60° in presence of anthranilic acid yields the pentoxide U_2O_5. X-ray analysis showed that in the equilibrium oxides (up to $UO_{2.57}$) there exists the hexagonal phase, characteristic of the U_2O_5 oxide.

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USSR

MOSKAL'KOVA, E. A., and TOLMACHEV, YU. M.

UDC 542.942:546.791.4'791.4

"Reduction of U_3O_8 to U_2O_5 by Aqueous Solution of U(IV) Sulfate"

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 758-762

Abstract: Experiments were carried out in a stream of nitrogen. To 1.5 g of U_3O_8 placed in a nitrogen-filled reaction vessel uranium (IV) sulfate solution was added. The contents were stirred for 1.5-2 hrs and then after about another 30 min the contents of U(IV), U(IV), and SO_4 were determined. It was found that oxides of the type $UO_{2.5}$ to $UO_{2.55}$ were formed. The structure of the oxide was also changed: the starting material was orthorhombic, while the products were hexagonal. It was shown that U(IV)-sulfate in aqueous solution is capable of reducing U_3O_8 to U_2O_5. The reaction proceeds according to the equation: $2\ U_3O_{8sol} + U^{4+}_{aq} + H_2O \rightarrow 3\ U_2O_{5sol} + UO^{2+}_{2aq} + 2\ H^+$.

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USSR

UDC: 621.315.3

SHCHERBAKOV, G. P., TROSHKOVA, I. I., TOLMACHEVA, A. Ye., NEKRASOV, V. A., PAVLOVA, N. N.

"The Drop Method of Removing the Glass Insulation From Microwires and its Possibilities"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 153-158 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V421)

Translation: The authors evaluate the possibilities of using the drop method of removing glass insulation to produce a contact joint in making filament resistors and voltage dividers, and in adjusting resistors to their rated value. It is experimentally shown that organic insulation of the Teflon type can be applied to the wire. Some characteristics of the molten drop are given (rate of glass destruction, etc.), together with the strength parameters of the wire. Resumé.

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USSR

TOLMACHEVA, A. YU.

UDC 577.4

"Comparative Estimate of the Efficiency of Algorithms for Synthesis of Finite Automata and Pattern Recognition"

Sravnitel'naya otsenka effektivnosti algoritmov sinteza konechnykh avtomatov i raspoznavaniye ob'ektov (Comparative Estimate of the Efficiency of Algorithms for Synthesis of Finite Automata and Pattern Recognition), Editorial Board of the Journal Avtomatika i vychisl. tekhn. of the Latvian SSR Academy of Sciences, Riga, 1971, 10 pp, 5 entries in the bibliography, No 3902-71 Dep (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V340 DEP)

No abstract

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- USSR

UDC 661.143(088.8)

LADYGINN, A., TOLMACHEVA, K. F., and KHOROSHILOVA, L. I.

"Process for Preparing Phosphors"

USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L170 by N. Sh.)

Translation: A method is described for preparing high quality luminescent compounds of diphenyl or diphenylamine or triphenylamine or their derivatives or urea or thiourea mixed with one of the salts of inorganic or organic acids (with halogens, nitrates, sulfates, phosphates, or acetates) of the metals of groups I-VIII of the periodic table in subsequent heating of the mixture from 120 - 220° for 30-120 minutes. The product obtained was then cooled, filtered, washed with a suitable solvent and dried. The listed components, for example diphenylamines and ammonium chloride had a relative weight ratio of 1:0.01-1. The new luminescent compounds in contrast to those which are known are prepared in different organic solvents and form luminescent solutions. By treating paper and fabric with these solutions a thin luminescent screen may be prepared using only a small amount of the compound. For example, a mixture made up of 1 gram of diphenylamine and 1 gram of aluminum

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LADYGIN, N. N., et al., USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72

chloride, after careful mixing is heated to 150°C for 30-40 minutes. The product obtained is cooled to 20°, dissolved in acetone and filtered from the undissolved particles. After evaporating the acetone, the powder is recrystallized. from ethanol and ground to necessary powder size. During excitation with ultraviolet light, the powder has a bright luminescent in the blue area of the spectrum.

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USSR

UDC 629.78.018.1

ARDASHEVA, M. M., IL'INA, S. A., LODYGIN, N. A., MAYKAPAR, G. I., PERVUSHIN, G. Ye., TOLMACHEVA, K. F.

"Use of Fusible Temperature Indicators to Measure Heat Fluxes to Models in Wind Tunnels"

Uch. zap. Tsentr. Aero-gidrodinam. Inta [Scientific Writings of Central Aero-Hydrodynamics Institute], Vol 3, No 1, 1972, pp 77-82, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.171 from the Resume).

Translation: Temperature-indicating countings are widely used in studying heat transfer in aerodynamic experiments. A method is described for studying fusible heat indicators which allows the temperature and temperature interval of melting of the temperature indicators to be determined as a function of pressure and heating rate. The rate of sublimation of the temperature indicators is determined at various pressures. The use of this method has allowed the All-Union Scientific Research Institute of Luminophors and high-purity substances to develop fusible temperature indicators suitable for investigation of heat transfer to flight vehicle models. Model photographs produced in various wind tunnels are presented as examples. 7 Figures; 1 Table; 4 Biblio. Refs.

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1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PHASE DIAGRAM OF A POTASSIUM BOROHYDRIDE, POTASSIUM CHLORIDE, POTASSIUM BROMIDE SYSTEM -U-

AUTHOR-(03)-ZAPOLSKIY, S.V., TOLMACHEVA, L.N., MIKHEYEVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 840-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SOLID SOLUTION, POTASSIUM BROMIDE, POTASSIUM CHLORIDE, BOROHYDRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1715 STEP NO--UR/0078/70/015/003/0840/0842

CIRC ACCESSION NO--AP0115544

UNCLASSIFIED