

USSR

UDC 539.4.015

IL'INA, R. I., SIDOROV, N. G., MOROZOV, B. S., NIKITINA, M. F., and
KOSHELEV, P. F., Moscow

"Interrelationship of Mechanical Properties and the Structure of Aluminum
and Magnesium Casting Alloys at Low Temperatures"

Kiev, Problemy Prochnosti, No 10, Oct 70, pp 108-112

Abstract: Test results of smooth and notched specimens of aluminum and magnesium alloys in a wide range of low temperatures are presented. The A₁19 aluminum alloy and the VMe2 magnesium alloy showed the best combination of properties in the 293-20°K temperature range. The VA₁5 and Me10 alloys showed properties up to a temperature of 77°K. A₁27-1 and A₁8M aluminum-magnesium alloys and the Me5 magnesium alloy can be used safely at temperatures up to 203°K.

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USSR

UDC: 621.791:621.472

AFANAS'YEV, I. V., SIDOROV, N. G., KRICHEVSKIY, YE. YU., and FILIMONOV, V. I.

"Use of Solar Ray Energy for the Welding of Materials"

Kiev, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

Abstract: Experiments involving the use of solar radiation heating units for welding aluminum, steel, and titanium indicate the following: radiant energy is capable of bringing up various materials to the point of melting and welding; effective results are facilitated by mirrors shaped to optical precision; the ultimate thickness of the metal being welded is determined by its thermophysical properties; increasing the absorption coefficient of solar rays by the weldpool will reduce radiant energy losses in welding; the bead width is determined by the focal spot diameter: the smaller the diameter, the deeper the penetration. Figures in the original article give an over-all view of a solar high-temperature furnace with an inclined optical concentrator axis, a schematic of the URAN-1 solar radiation heating unit, and finally a schematic drawing of a solar radiation welding unit incorporating a concentrator for parallel solar rays to the focal point.

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AFANAS'YEV, I. V., et al, Avtomaticheskaya svarka, Sept 71, no 9, pp 67-68

It is suggested that a source of this type built from tantalum carbide may be heated in outer space vacuum up to 3500°K. Arrangements for convenient transportation and reducing the weight of the system are discussed. The long-range potentialities of solar radiation welding are stressed.

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USSR

UDC 539.4

TAVER, Ye. I., RYSKIN, A. N., KOPYLOV, A. K., SIDOROV, N. G., KRICHEVSKIY, Ye. Yu., SUKHOTIN, A. M., ANTROPOV, N. P., ANTONOVSKAYA, E. I., Leningrad

"Strength of Welded Joints in High-Strength Stainless Steels at Cryogenic Temperatures"

Kiev, Problemy Prochnosti, No 6, 1972, pp 93-96.

Abstract: The influence of the geometry of welded seam made by austenitic wire on the strength of welded joints of martensitic stainless steels at cryogenic temperatures is studied. The influence of technological defects (such as under- and overheating) on strength of welded joints of two types of steels at low temperatures is studied. It is established that designers must consider both reduced strength of seam metal under normal conditions and impermissibility of any stress concentrators in the seam zone.

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Acc. Nr.

AP0049950

Abstracting Service:

CHEMICAL ABST. 5/0

Ref. Code

4R0051

105635a Dependence of the intensity of Raman spectral lines on concentration in binary solutions. Kalashnikova, L. P.; Sidorov, N. K. (USSR). *Opt. Spektrosk.* 1970, 28(2), 260-5 (Russ). The dependence of the intensity of polarized and depolarized Raman spectral lines on concn. in binary solns. contg. C₆H₆, PhCl, CCl₄, C₄H₁₀, and EtOH has been investigated. For the solns. wit. out EtOH the intensity increases with increasing n of the soln. The intensity corresponding to the individual component increases (decreases) with increasing (decreasing) concn. of the component in the soln. In the presence of EtOH the dependence is more complicated. The intensity of Raman spectral lines of nonpolar compd. dissolved in a polar compd. decreases, whereas the Raman spectral lines intensity of polar compd. dissolved in a nonpolar compd. increases.

V. Vesely

REEL/FRAME
19801888

7 14

USSR

UDC 661.666-494.001.5

FIALKOV, A. S., SIDOROV, N. M., SMIRNOV, B. N., and DYUZHNIKOV, B. I.

"Specific Features of the Structure and Growth of Threadlike Pyrocarbon Formations"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 1, Jul-Aug 73, pp 158-160

Abstract: The initial period of the growth of thread-like pyrocarbon formations -- the so-called "whiskers" -- has been investigated. The "whiskers" were obtained at a temperature 900-1000° in 10-40 mm Hg vacuum from benzene vapors without any gas diluent, over graphite supports, using metallic catalyst. It has been shown that the actual carbon whisker consists of a central core shooting out of the surface of the activated support in form of a band 100-200 Å thick, rolled into a cylindrical spiral. The formation process of these whiskers goes through several stages: activation of the support, radical-chain type reaction occurring during the cracking of the hydrocarbon followed by chain polymerization of the products. The thickening of the cores is due to the deposition of sooty and pyrocarbon films on its surface.

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SIDOROV N.V.

Ref. Code: UR 9003

Acc. Nr.: AN0104123

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

49

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. AL. PEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, L. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame
19870555

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Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUS, KO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIR, YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT,

2/2

Real/Frame

19870556

KZ

172 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--QUALITY OF STAINLESS, LOW CARBON STEEL -U-
AUTHOR--(05)-KASYANOV, A.G., GUREVICH, YU.G., MARKELOV, A.I., SIDOROV,
N.V., GERASIMOV, YU.V.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, METALLURG., NO 5, MAY 70, PP 17-19
DATE PUBLISHED----MAY70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--LOW CARBON STEEL, STAINLESS STEEL, METALLURGIC PLANT,
MECHANICAL PROPERTY, ARGON SCAVENGING, VACUUM MELTING, HIGH QUALITY
STEEL, ARC FURNACE, FERROUS LIQUID METAL, INDUCTION FURNACE, STEEL
IMPURITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0409 STEP NO--UR/0130/70/000/005/0017/0019
CIRC ACCESSION NO--AP0135881
UNCLASSIFIED

Z/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135881

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STAINLESS, LOW CARBON STEEL DEVELOPED AT THE ZLATOUST METALLURGICAL PLANT IS DESCRIBED. THE CARBON CONTENT OF THIS STEEL IS LESS THAN 0.030PERCENT, AND THE STEEL IS MADE IN OPEN ARC FURNACES USING METAL ELECTRODES OR BY SCAVENGING THE LIQUID STEEL WITH ARGON. COMPARISONS WERE MADE BETWEEN THIS STEEL AND A SIMILAR METAL MADE IN VACUUM INDUCTION FURNACES. A TABLE GIVES THE IMPURITIES IN THE VARIOUS TYPES OF STEEL PRODUCED BY THE TWO METHODS, THE USE OF METAL ELECTRODES AND ARGON SCAVENGING. AN ANALYSIS OF THE RESULTS OF A QUANTITATIVE ESTIMATE OF IMPURITIES SHOWED THAT OWING TO THE HIGH DEGREE OF DEFORMATION, THE CONTAMINATION ALONG THE TRANSVERSE AXIS OF THE STEEL SHEET IS LESS THAN THAT ALONG THE LONGITUDINAL AXIS. THE MECHANICAL CHARACTERISTICS OF THE STEEL SATISFIED ALL TECHNICAL REQUIREMENTS. A COMPARISON OF THE MECHANICAL CHARACTERISTICS OF THIS STEEL MADE BY THE THREE PROCESSES DISCUSSED, METALLIC ELECTRODES, ARGON SCAVENGING, AND VACUUM INDUCTION, IS ALSO PRESENTED. FACILITY: CHELYABINSK POLYTECHNICAL INSTITUTE. FACILITY: ZLATOUS METALLURGICAL PLANT.

UNCLASSIFIED

USSR

UDC 669.18.046.554

SIDOROV, N. V., GERASIMOV, Yu. V., KHAYRUTDINOV, R. M., FILATOV, S. K.,
KHASIN, G. A., BARMOTIN, I. P., KAS'YANOV, A. G., CHEREMNYKH, B. A., and
ISHMURZIN, M. G., Zlatoust Metallurgical Plant, Scientific Research
Metallurgical Institute, Chelyabinsk

"Out-of-Furnace Refining of Low-Carbon Corrosion-Resistant Steels"

Moscow, Metallurg, No 12, Dec 70, pp 22-23

Abstract: The smelting technology of low-carbon corrosion-resistant steels in electric arc furnaces with argon scavenging in the foundry ladle has been developed and introduced into production at the Zlatoust Metallurgical Plant. The main principles of the out-of-furnace degassing effectiveness depends on the chemical composition of the steel, the slag, and the scavenging parameters were investigated.

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USSR

5 UDC 669.14.018.8:658.562

KAS'YANOV, A. G., GUREVICH, YU. G., MARKELOV, A. I., SIDOROV,
N. V., GERASIMOV, YU. V., KHASIN, G. A., CHISTYAKOV, S. L.,
POLYAKOV, YU. V., LEBEDEVA, V. N., Chelyabinsk Polytechnical
Institute and Zlatoust Metallurgical Plant

"Quality of Stainless, Low-Carbon Steel"

Moscow, Metallurg., No 5, May 70, pp 17-19

Abstract: A stainless, low-carbon steel developed at the Zlatoust Metallurgical Plant is described. The carbon content of this steel is less than 0.030%, and the steel is made in open arc furnaces using metal electrodes or by scavenging the liquid steel with argon. Comparisons were made between this steel and a similar metal made in vacuum induction furnaces. A table gives the impurities in the various types of steel produced by the two methods -- the use of metal electrodes and argon scavenging. An analysis of the results of a quantitative estimate of impurities showed that owing to the high degree of deformation, the contamination along the transverse axis of the steel sheet is less than that along the longitudinal axis. The mechanical
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KAS'YANOV, A. G., et al., Metallurg., No 5, May 70, pp 17-19

characteristics of the steel satisfied all technical requirements. A comparison of the mechanical characteristics of this steel made by the three processes discussed -- metallic electrodes, argon scavenging, and vacuum induction -- is also presented.

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1/2 - 019
 UNCLASSIFIED
 TITLE--THERMODYNAMICS OF OUTER SPHERE COMPLEXES. IV. COEFFICIENTS OF THE
 ACTIVITY OF THE RACEMATE AND D, AND L, TRIETHYLENEDIAMINECOBALT(III)
 AUTHOR--(04)-SMIRNOV, A.P., SIDOROV, P.S., RAGULIN, G.K., MIRONOV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 420-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPLEX, THERMODYNAMICS, ISOMER, PERCHLORATE, NITRATE, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1987/0330

STEP NO--UR/0076/70/044/002/0420/0421

CIRC ACCESSION NO--AP0103985
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

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CIRC ACCESSION NO--AP0103985

ABSTRACT/EXTRACT--(U) GP-0-

RACEMATE, AND THE D AND L ISOMERS OF TRIETHYLENEDIAMINE COBALT(III) PERCHLORATE, NITRATE, AND SULFATE IN AQ. SOLNS. ARE DETD.; THEY ARE EQUAL IN MAGNITUDE WITHIN THE LIMITS OF 1PERCENT. THIS MEANS THEIR ABILITY FOR OUTER SPHERE ASSOCH. IS EQUAL. C. J. STEINBERG.

UNCLASSIFIED

USSR

UDC 669.15'24-194:539.125.517.2

MEN'SHIKOV, A. Z., ARKHIPOV, V. Ye., ZAKHAROV, A. I., and SIDOROV, S. K.,
Institute of Metal Physics of the Ukrainian National Center of the Academy
of Sciences USSR

"Atomic Correlation in Invar Ferro-Nickel Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 309-315

Abstract: An experimental investigation was made of the nuclear diffusion scattering of neutrons on hardened specimens of ferro-nickel alloys (50, 65, and 70 at% Fe). The specimens contained the isotope of nickel 62 having a negative amplitude of scattering. The parameters of the short-range order ($a < 0$) in the first and the second coordination spheres were calculated by the method of least squares from experimental curves of the dependence of the differential scattering section on the wave vector. The calculation of the number of atoms in the first coordination sphere indicates that in hardened nickel alloys containing 65 and 70 at% Fe, a short-range order of the NiFe or NiFe₃ types is being established. A parallel investigation was made of the change of the linear expansion coefficient and parameters of the short-range order depending on the annealing temperature of the Invar alloy. The experiments revealed that temperature annealing, reducing to a development

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MEN'SHIKOV, A. Z., et al., Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 309-315

of a short-range order, decreases the anomaly of the linear expansion coefficient. Therefore, the atomic correlation of the short-range-order type can only attenuate the Invar phenomenon, but it cannot be its source. Two figures, one table, fifteen bibliographic references.

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036 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SPECTRA OF SLOW NEUTRONS FROM A CONTINUOUS TANGENTIAL REACTOR

CHANNEL -U-
AUTHOR--(05)-GOSHCHITSKIY, B.N., GUSEV, V.V., KONSTANTINOV, L.V.,
KOROTOVSKIKH, P.M., SIDOROV, S.K.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 425-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPECTRUM, SLOW NEUTRON, GRAPHITE, PLEXIGLASS, MAXWELL
DISTRIBUTION, NEUTRON FLUX, NUCLEAR REACTOR/(U)IVV2 REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0584

STEP NO--UR/0089/70/028/005/0425/0426

CIRC ACCESSION NO--AP0137669

UNCLASSIFIED

272 036

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVENESS OF GRAPHITE AND PLEXIGLAS AS SCATTERERS FOR THE EXTN. OF SLOW N FROM A CONTINUOUS TANGENTIAL REACTOR CHANNEL WAS STUDIED BY OBTAINING ENERGY SPECTRA OF SLOW N FROM THE TANGENTIAL CHANNEL GEK-5 OF THE REACTOR IVV-2. THE N FLUX WAS MEASURED AS A FUNCTION OF THE N WAVELENGTH, THE LENGTH OF THE SCATTERER, AND THE ANGLE OF THE SCATTERER WITH RESPECT TO THE CHANNEL AXIS. THE SPECTRA ARE COMPARED WITH MAXWELL DISTRIBUTION CALCD. FOR T EQUALS 290DEGREEK. IN ALL CASES THE SPECTRA ARE DESCRIBED BY THE SAME ENERGY DISTRIBUTION. THE OBSD. WEAK ABSORPTION OF N IN THE PLEXIGLAS SCATTERER DID NOT AFFECT THE CHARACTER OF THE SPECTRUM, BUT SLIGHTLY DECREASES THE VALUE OF THE N FLUX FOR EACH ENERGY.

UNCLASSIFIED

Acc. Nr: AF0037846

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 124-129

MAGNETIC PROPERTIES OF TERNARY ALLOYS OF THE NICKEL - IRON - MANGANESE SYSTEM

A. V. Doroshenko, S. K. Gidrov

The saturation magnetization and temperature dependence of the susceptibility of ternary Ni(Fe_{1-x}Mn_x) alloys is measured. It is shown that the magnetization is zero when the alloy contains 28 at.% Mn. In the vicinity of the concentration $c_{Mn} = 28$ at.% Mn the magnetic properties strongly depend on field strength. The results are discussed on basis of the concept of disorientation of atomic magnetic moments. The analysis indicates that exchange interaction in Fe - Mn pairs is negative and its magnitude is close to that of exchange interaction in Mn - Mn pairs.

REEL/FRA
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USSR

UDC 778.37

DUBOVIK, A. S., SIDOROV, S. N., and BARANOV, S. V., Institute of Earth
Physics, Academy of Sciences, USSR

"The SFR-2MT High-Speed Photographic Installation With a Turbine Drive"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, No 1,
1971, pp 9-14

Abstract: In the investigation of high-temperature plasmas, laser radiation, explosive and other self-luminous processes that are measured by small time intervals of the order of 10^{-6} - 10^{-8} second, use is made of optomechanical photographic instruments and installations with mirror scanning, which permit the phenomena to be recorded on a photographic film by means of a rotating mirror. Many such photographic installations have been developed in the Institute of Earth Sciences, Academy of Sciences, USSR.

One of these instruments is the SFR-2MT photographic installation with a turbine drive. The specifications of the instrument are given. This instrument is an adaptation of the presently series-produced SFR-24 high-speed photorecording installation. 7 figures, 8 bibliographic entries.

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USSR

UDC 612.846

FILIN, V. A., and SIDOROV, S. P., All-Union Scientific Research Institute of
Medical Instrument Building and Medical Physical Culture Dispensary, Moscow
Municipal Health Department

"Involuntary Movements of the Eyes During Mental Work"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22,
No 4, Jul/Aug 72, pp 683-691

Abstract: By means of telephotoelectronic recording in a dark room, involuntary movements of the eyes were studied in adult subjects with normal visual acuity. About 8 jumps of the eyes occurred while the subjects were looking straight ahead or had their eyes fixed on a dimly illuminated point and, in most subjects, their number decreased to three or two when they began counting by 7 starting with 100. Thus, with the eyes fixed, the average interval between jumps was 1.3 sec, and it increased to 3.8 sec during counting. With eyes looking straight ahead, the initial average interval of 1.5 sec increased to 2.9 sec during counting. Similarly, the amplitude of the jumps and eye drift diminished during performance of mental work. When the fixation point was shifted by 10° during counting, most subjects did not adjust their gaze and some did not even notice the shift. Individuals in whom the eye movements did not diminish made mistakes in counting. It is concluded that the reduction in eye movements during performance of mental work is indicative of a person's ability to concentrate without dividing attention over two or more subjects.

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USSR

UDC: 621.373:530.145.6

ZABOKRITSKIY, B. Ya., SIDOROV, S. V., SOSKIN, M. S.

"On the Mechanism of Two-Transition Generation in Neodymium Glasses"

V sb. Peredacha energii v kondensirovan. sredakh (Energy Transmission in Condensed Media--collection of works), Yerevan, 1970, pp 91-101 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D217)

Translation: The authors are the first to take neodymium glass as an example for studying "two-transition" generation of rare earth ions in a glass matrix with emission realized in a dispersion cavity (transitions from level ${}^4F_{3/2}$ to levels ${}^4I_{11/2}$ and ${}^4I_{9/2}$). The basic properties of simultaneous emission in the regions of 0.92 and 1.06 μ are determined: threshold conditions, time cycle and spectral composition of radiation, as well as the mutual effect of generation on both transitions. A weakly pronounced relationship is found for the threshold characteristics of generation for both transitions. The results are discussed. A. K.

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USSR

SIDOROV, V.

"The Heart and Heat"

Leningrad, Leningradskaya Pravda

Translation: There is not enough information from the electrocardiogram and stethoscope about the thermal organization of the heart for the medical researcher to develop a clear, complete picture of the work of the heart. However, until recent times, the detection of the thermal characteristics was impossible, so long as there was no precision instrument for measurement of infrared radiation.

Now there is such an instrument. It was constructed by the co-workers of the Main Institute of the Society "Pozitron," directed by engineer A. Sushchevly and engineer V. Istyutevly.

Here is how this invention is evaluated by the head of the Laboratory of Rentgenophonodiagnosis of Cardiovascular Diseases, Institute of Cardiology, Academy of Medical Sciences USSR, Professor I. I. Savchenkov:

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SIDOROV, V., Leningradskaya Pravda

"The apparatus, constructed by Leningraders, gives precise readings during contraction and relaxation of the heart muscles. It was established that in a healthy person the temperature difference in the heart, between the posterior wall of the left ventricle and the wall of the aorta must be a constant 0.5°. Deviations from the normal will help the doctor to form a correct diagnosis."

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USSR

BALAKIN, V. YE., BUKIN, A. D., KURDADZE, L. M., ONUCHIN, A. P., PAKHTUSOVA, YE. V., SEREDNYAKOV, S. I., SIDOROV, V. A., and KHABAKHPASHEV, A. G., Institute of Nuclear Physics of the Siberian Department of the Academy of Sciences USSR

"Observation of Double e^+e^- -Pair Production"

Moscow, Yadernaya Fizika, Vol 16, No 4, 1972, pp 729-733

Abstract: The article describes results of the first experiments (in 1969 and 1970) on the observation of the process of the double pair production of the electron-positron pairs $e^+e^- \rightarrow e^+e^- + e^+e^-$ on a VEPP-2 positron-electron accelerator ring. Papers on this work were presented in 1971 at international conferences in Amsterdam and Cornell. The cross-section of the process for large angles of emission for the produced particles was measured. The experimental results were found to be in agreement with the theoretical calculations of V. N. BAYYER and V. S. FADIN.

The authors thank V. N. BAYYER and V. S. FADIN for discussions.

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6679 (SLAC-Trans-105) PRELIMINARY RESULTS OF A
 STUDY OF THE ρ -MESON RESONANCE USING COLLIDING
 ELECTRON-POSITRON BEAMS. Balakin, V. E.; Budker, G. L.;
 Korshunov, Yu. V.; ~~Mishnev, S. I.; Pakhtusova, E. V.; Pestov,~~
 Yu. N.; ~~Sidorov, L. A.; Skrnitskii, A. N.; Tumarkin, G. I.; Khabakha-~~
~~pashev, A. G.~~ (Akademiya Nauk SSSR, Novosibirsk, Institut
 Yadernoi Fiziki). Translated by T. Watt for Stanford Linear
 Accelerator Center, Calif., from Russian Preprint No. 327. 12p.
 Dep. CFSTI.

The results are reported of a preliminary analysis of approxi-
 mately 100,000 photographs from a spark-chamber study of the ρ -
 meson, using the electron-positron storage ring VEPP-2. The
 measurements were carried out for nine energy values between
 508 and 514 MeV. Two types of events were analyzed: elastic
 electron-positron scattering and charged kaon pair production. A
 least-squares fit of the results to the Breit-Wigner curve yielded
 the following values for the resonance parameters: $\Gamma = 4.1 \pm 0.5$
 MeV and $\sigma_p = 2.3 \pm 0.3 \mu b$. The total resonance cross section for
 the formation of the ρ -meson was found to be $6p = 4.8 \pm 0.6 \mu b$.
 (L.B.S.)

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UDC 621.382.002

USSR

SIDOROV, V. G.

"Test of Statistical Control of the Quality of Semiconductor Devices"

V sb. Nadezhnost' i kontrol' kachestva (Reliability and Quality Control -- Collection of Works) [Supplement to journal "Standards and Quality"], Moscow, 1971, No 5, pp 3-7 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B366)

Translation: There are two aspects to the organization of work on the improvement of quality and increase of the percentage of output of suitable semiconductor devices: (1) The physical basis for the choice of optimum materials, the geometry of the structure, and the technological regimes; and (2) Statistical study and development of mathematical models and algorithms for control of technological processes. A graphic scheme for the principal interrelationships of the technological process is composed on the basis of an analysis conducted on the optimum and boundary admissible values of the parameters of MP39-41A transistors with possible deviations taken into account. In the technological process, four control points are selected: regime of fusing, etching with subsequent washing

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SIDOROV, V. G., Nadezhnost' i kontrol' kachestva (Reliability and Quality Control -- Collection of Works) [Supplement to journal "Standards and Quality"], Moscow, 1971, No 5, pp 3-7 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B366)

and drying, nomenclature distribution according to type of transistor, and reverse current at a temperature of 70° C. Additional statistical control is established of the quality of production of the electrodes of the emitter and collector, graphite fittings, germanium crystals, metal-glass housings, and stamped components. A dispersible analysis and classification of the effects of technological factors is conducted with respect to a number of parameters. Statistical control is conducted of quantitative and qualitative characteristics. I.M.

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UDC 621.382.3

USSR

FEDOTOV, YA. A., SIDOROV, V.G., GUSEV, V.A., VASIL'YEV, A.P., REMIZOVA, G.V.

"Definition Of The Determinant Factors During Physico-Mathematical Investigation Of The Quality Of Alloy-Type Low-Power Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, No 1(51), pp 3-24 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B176)

Translation: A method is proposed for analysis of the quality of alloy-type low-power transistors with the aid of physico-mathematical methods which define the determinate factors effecting the change of the individual parameters. Author's Summary.

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USSR

UDC 632.954:635.11/13/.21/.34/.64/.652
KOLESNIKOV, V. A., SIDOROV, V. I., and CHKHETIANI, V. R., Scientific
Research Institute of Horticulture

"The Effect of Herbicides on the Weed Growth and Crop of Fruit Cultures
With Prolonged Application"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 8 (118), 1973, pp 50-54

Abstract: After a prolonged unchanged application of prometrin, chloro-IFK and trephlan on some plots, their effectiveness against the weeds dropped considerably. Alternating these agents led to a lesser drop of their effect. The appearance of the weeds contaminating fruit cultures changed after prolonged application of these herbicides. Only trephlan lowered the yield of fruit after the third and fourth year of continuous unaltered application. With application of prometrin and chloro-IFK an insignificant drop in the crop was experienced, which could be due to the cumulative effect of these herbicides, which happens to be relatively low.

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UDC 537.312.62

USSR

BERMAN, I. V., BRANDT, N. B., SIDOROV, V. I.

"Superconductivity of Gallium Arsenide at High Pressures"

Pis'ma v ZhETF (Letters to the Journal of Experimental and Theoretical Physics), 1971, Vol 14, No 1, pp 18-19 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10D300)

Translation: A report is given on detecting superconductivity in GaAs in the pressure range exceeding 250 kilobars. Pressures up to 300 kilobars were created at room temperature in a high pressure chamber using anvils made of polycrystalline superhard materials of the SV type, and they were analyzed by a calibration curve based on the reference lines of the phase transitions of Bi, Fe, Pb, and Fe-Co. A force of up to 4 tons was created by a mechanical low temperature press. The transition temperature was 4.8° K at a pressure of 260 kilobars, and it decreased with a further decrease in pressure at an average rate of $dT_k/dp = 0.2 \cdot 10^{-5}$ deg/bar. It is assumed that the transition temperature of metallic versions of the compounds of groups AIII-BV must be close to the transition temperature of isostructural or metallic versions of the elements of group IV having an atomic mass close to the mean atomic mass of the compound

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USSR

BERMAN, I. V., et al., Pis'ma v ZhETF, 1971, Vol 14, No 1, pp 18-19
only in the case where the atomic weights of the elements differ little from
each other. There is 1 illustration and a 5-entry bibliography.

2/2

- 150 -

UDC 632.954.635

USSR

KOLESNIKOV, V. A., and SIDOROV, V. I., Scientific Research Institute of Vegetable Farming

"The Effectiveness of Herbicide Application in Vegetable Crop Rotation"
Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 45-47

Abstract: Long-term effects of herbicides were tested on a crop rotation of green beans, early cabbage, and tomatoes. The herbicides were sprayed on as follows: prometryne in a 1.5 kg/ha dosage on the 3rd or 4th day after bean planting; treflan in a 2 kg/ha. dosage on the eve of cabbage planting with immediate working into the soil by hand fork; and diphenamid in an 8 kg/ha. dosage 2 days before setting out tomato plants, without working into the soil. Each test plot was paired with a control plot. The soil was of moderately podzolic soddy loam, pH 6.0, humus content (according to Tyurin) 2.6%, P_{2O_5} according to Kirsanov 18.8 and K_2O according to Maslova 16.4 mg. per 100 g. of soil. Weather during the 2 years of the test was favorable for plant growth. The herbicides reduced weed content of these cultures significantly throughout the vegetation period and also significantly reduced the seed formation of remaining weeds and hence weed renewal by seed. The herbicides also saved a great deal of hand work. Aftereffects of the

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USSR

KOLESNIKOV, V. A., and SIDOROV, V. I., Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 45-47

herbicides, particularly during the 2 year application, were manifested in a lowering of weed content in later cultivations throughout the vegetation period. The herbicides indicated had no adverse effects on the harvest or the quality of the vegetables tested.

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UDC 632.954:635.13/.21/.34

USSR

KOLESNIKOV, V. A., and SIDOROV, V. I., Scientific Research Institute of Vegetable Economy

"Aftereffects of Herbicides Employed on the Background of Banked and Nonbanked Plowing on the Contamination and Harvest of Vegetable Cultures"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 49-51

Abstract: Herbicides used in the chain of crop rotation -- prometrin (2 kg/hectare) on potato plantings, prometrin or linuron (2 kg/hectare) on carrots crops, semeron (0.7 kg/hectare) on cabbage crops lowered substantially the contamination of these cultures during the entire vegetation period, thus lowering the need for manual weeding. Application of herbicides on preceeding cultures either in case of banked or nonbanked plowing resulted in lower costs for weed control of the second and third cultures of the crop rotation cycle -- carrots and cabbage. Using the proper sequence of these herbicides it should be possible to shorten their application to two rather than three years. These herbicides did not lower the crop or the quality of potato, carrots or cabbage. The banked plowing appeared to be more advantageous since it lowered the weed growth.

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UDC 536.46:533.6

USSR

KALABUKHOV, G. V., RYZHIK, A. B., YURAMNOV, Yu. A., SIDOROV, V. M., OSIPOV, B. R., FAYERMAN, S. N.

"On the Effect of Reaction-Kinetic Properties of an Inflammable Flow in the Combustion of Aluminum Powders"

V sb. Gorennye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 204-206 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B969)

Translation: Shock tube studies were made of the combustion of aluminum powder when detonation waves act on it. These waves differ in intensity and chemical composition. It was established that the increase in the detonation rate of the gas mixtures impedes combustion to a greater degree than the detonation temperature is lowered. The positive effect of oxygen, carbon dioxide, and small quantities of nitrogen and argon on the combustion of disperse aluminum is noted. Rarefaction of the stoichiometric mixture of hydrogen and oxygen with light gases (hydrogen and helium) leads to a decrease in the degree of combustion of the powder. 5 ref. Authors' abstract.

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UDC: 8.74

USSR

SIDOROV, V. M.

"Classification of Problems in Mathematical Geology. Part 1. Theoretical Questions of Computer Software"

Kiev, Klassifikatsiya geologo-matematicheskikh zadach. Ch. 1. Teoreticheskiye voprosy matematicheskogo obespecheniya EVM. AN USSR. In-t geokhimii i fiz. mineralov. Resp. fond algoritmov i program (cf. English above. Academy of Sciences of the UkrSSR. Institute of Geochemistry and Physics of Minerals. Republic Algorithm and Program Bank), 1972, 530 pp, ill. 1 r. 55 k. (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V662K)

Translation: The principles of classifying problems in mathematical geology are presented in such a way as to embrace an extensive class of practical and theoretical problems in geology -- from specific problems in prospecting to complicated hierarchical constructions such as type classifications of minerals and rocks, classifications of facies and formations, geochemical classifications, classifications of objects according to their physical, physicochemical and other properties, and also genetic classifications.

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PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 9 March 1970, Vol III, Nr 46, p D 1

USSR

DISCOVERY OF PI-MESON REPORTED AT DUBNA INSTITUTE

[Editorial Report--L] Moscow SOCIALIST INDUSTRY of 5 March 1970 publishes a report by TASS correspondent A. Vrenyskov entitled "The Discovery of the Secret of Pi-meson." The report describes how, experimenting on a synchrocyclotron at the Dubna Joint Nuclear Research Institute, "Soviet physicists have accomplished the previously unknown transformation of a positive meson into a negative one. The reaction can be reversed from a negative meson to a positive one."

The report continues: "This research by physicists Yu. A. Batunov, S.A. Bunyatov, Y.M. Sadorov, and Y.A. Yarcha was examined on 3 March and acknowledged as an outstanding scientific discovery at a session of the USSR Council of Ministers Committee for Inventions and Discoveries."

"The Soviet physicists' discovery," the report continues, "is of enormous theoretical importance. Thus, in the opinion of scientists, with the help of the newly discovered reaction of pi-mesons a search for new atomic nuclei can be conducted."

19741816

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Recently, the report says, research scientists have been interested in the possibility of the existence of "multineutron systems" and even of "neutron drops." The Soviet physicists' latest work "has made it possible to investigate this extremely interesting problem under laboratory conditions." The scientists are now investigating the effects of the "double recharging" of pi-mesons. They are being aided in their research by physicists from Bulgaria, Mongolia, and Romania.

19741817

UDC: 51:621.391

USSR

SIDOROV, V. N., YUSUPOV, R. M.

"Some Problems of Increasing the Interference Immunity of Algorithms of Automated Control Systems"

Vladivostok, Inform. metody v sistemakh upr. izmereniy i kontrolya--sbornik (Information Methods in Measuring and Monitoring Control systems--collection of works), T. 1, 1972, pp 378-390 (from RZh-Matematika, No 8, Aug 73, abstract No 8v441 by V. Dyn'kin)

Translation: Informational, structural, and algorithmic redundancy are used to control distortions of information due to malfunctions in digital computers. In this paper the authors solve problems of analyzing the interference immunity of algorithms described on the level of basic mathematical relations and on the level of numerical methods. The informational flowchart is considered as a formal vehicle. The sensitivity of the algorithm to distortions of information caused by digital computer malfunctions serves as an estimate of the interference immunity of the algorithm. The informational flowchart is broken down into subcharts of calculation and subcharts of control. Analysis of the sensitivity of the algorithm is reduced

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USSR

SIDOROV, V. N., YUSUPOV, R. M., Inform. metody v sistemakh upr. izmereniy i kontrolya, T. 1, 1972, pp 378-390

to analysis of the sensitivity of these subcharts, and the corresponding procedures are presented. The requirements for accuracy in checking the parameters of the algorithm are pointed out. The authors formulate the problem of constructing algorithms having high inherent interference immunity.

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USSR

SIDOROV, V. N., YUSUPOV, R. M.

"Some Problems of Increasing the Interference Resistance of ACS Algorithms"

Inform. metody v sistemakh upr. izmereniy i controlya. T. 1 [Information Methods in Control, Measurement and Testing Systems. Volume 1 -- Collection of Works], Vladivostok, 1972, pp 378-390 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V441 by V. Dyn'kin)

Translation: The struggle with distorted information caused by computer errors involves the use of information, structural and algorithmic redundancy. In this work, problems of the analysis of the interference stability of algorithms described at the level of the basic mathematical relationships and at the level of numerical methods, are solved. The formal apparatus studied is the information graph plan (IGP). The sensitivity of the algorithm to distortions of information caused by computer errors is taken as an evaluation of the interference stability of an algorithm. The IGP is divided into the control and computation of graphs. Analysis of the sensitivity of the

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USSR

SIDOROV, V. N., YUSUFOV, R. M., Inform. metody v sistemakh upr. izmereniy i controlya. T. 1., 1972, pp 378-390

algorithm is reduced to the analysis of the sensitivity of the subgraphs, and the corresponding methods are presented. The requirements for accuracy of testing of the parameters of the algorithm are indicated. The problem of construction of algorithms having high natural interference stability is stated. Examples are presented.

2/2

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1/2-023
 TITLE--SOME RESULTS OF THE OBSERVATIONS OF THE HYDROXYL EMISSIONS DURING
 IQSY -U-
 AUTHOR--SIDOROV, V.N. S
 COUNTRY OF INFO--USSR
 SOURCE--RAZDEL IV, POLYARNNYE SIYANIYA I SYECHENIYE NOCHNOGO NERA, 1970,
 NR 18, PP 33-36
 DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--SEASONAL VARIATION, ROTATION, TEMPERATURE, HYDROXYL RADICAL,
INTERNATIONAL QUIET SUN YEAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0123

STEP NO--UR/3307/70/000/018/0033/0036

CIRC ACCESSION NO--AP0114519
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--020CT70

2/2 023

CIRC ACCESSION NO--AP0114519

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RESULTS OBTAINED DURING OBSERVATIONS CONFIRM THE SEASONAL AND LATITUDINAL VARIATIONS IN ROTATION TEMPERATURE FOUND EARLIER. THE SYNCHRONOUS VARIATIONS IN ROTATION TEMPERATURE IN DIFFERENT POINTS OF OBSERVATION MAKE IT POSSIBLE TO ESTIMATE THE SPACE DIMENSIONS OF UNIFORMITIES AT A DISTANCE OF ABOUT 3000 KM.

UNCLASSIFIED

USSR

ROMANENKO, YU. A., VASIL'YEV, V. P., SIDORCHUK, V. G., and SIDOROV, V. N.,
Siberian Scientific Research Institute of Geology, Geophysics and Mineral
Raw Materials

"Information Reader"

USSR Authors' Certificate No 356663, Cl. G 06k 9/02, filed 7 Apr 70, pub-
lished 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy,
Tovarnyye Znaki, No 32, 1972, p 145)

Abstract: The device contains, situated on the principal optical axis, an objective, a cathode-ray tube, reflecting plates, a semitransparent mirror and a mask optically coupled therewith, a converging lens and a receiver, connected through the control unit to the cathode-ray tube output. To increase the operating speed of the device, the reflecting surfaces of a prism are arranged at a 45° angle to the direction of the main beam and perpendicular to the principal optical axis, parallel to which and at a 45° angle to the direction of the line beam trace, at a distance which is a multiple of the length of the picture line, are mounted reflecting plates for the light of

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USSR

ROMANENKO, YU. A., et al., USSR Authors' Certificate No 356663

the beams of each line, perpendicular to the principal optical axis are mounted reflecting surfaces for the displacement of the line beams, and at a distance and at an angle determined by the constancy of the beam trace length for each line are situated reflecting surfaces for flyback.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SURFACE WAVES IN A PLASMA WITH AN OSCILLATING CURRENT. II. PLASMA
SURROUNDED BY A SHEATH OF INFINITE CONDUCTIVITY -U-
AUTHOR-(02)-SIDOROV, V.P., TSYPIN, V.S.
COUNTRY OF INFO--USSR
SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, P. 81-84
DATE PUBLISHED----MAR70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PLASMA SHEATH, ELECTRON OSCILLATION, PLASMA WAVE, SURFACE
WAVE, LOW TEMPERATURE PLASMA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1840 STEP NO--AU/0000/70/010/000/0081/0084
CIRC ACCESSION NO--AP0101887
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 036

CIRC ACCESSION NO--AP0101887

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE AUTHORS INVESTIGATE SURFACE WAVES EXCITED IN COLD PLASMA BY AN OSCILLATING CURRENT, CONSIDERING CASES WHERE THE PLASMA IS BOUNDED (PLASMA LAYER AND PLASMA CYLINDER). IT IS PHYSICALLY CLEAR THAT ONE HAS TO TAKE INTO ACCOUNT THE ACTUAL GEOMETRY OF THE PLASMA CONFIGURATION WHEN THE DAMPING LENGTH OF A SURFACE WAVE IS COMMENSURATE WITH THE TRANSVERSE DIMENSIONS OF THE PLASMA. THE AUTHORS STUDY THE SURFACE WAVES WHEN THE PLASMA IS SURROUNDED BY A METALLIC SHEATH OF INFINITE CONDUCTIVITY. THE CONDITIONS ARE FOUND FOR THE BUILD UP OF THREE DIMENSIONAL SURFACE WAVES AND THE CORRESPONDING EXPRESSIONS DERIVED FOR THEIR FREQUENCIES AND GROWTH RATES.

FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIJU ATOMNOI ENERGII, FIZIKO TEKHNICHESKII INSTITUT, SUKHUMI, GEORGIAN SSR.

UNCLASSIFIED

1/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--SURFACE WAVES IN A PLASMA WITH AN OSCILLATING CURRENT. I. LONG WAVE
OSCILLATIONS OF A COLD BOUNDED PLASMA -U-

AUTHOR--(02)-SIDOROV, V.P., TSYPIN, V.S.

S

COUNTRY OF INFO--USSR

SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, P. 75-80

DATE PUBLISHED---MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA OSCILLATION, LOW TEMPERATURE, ELECTRON OSCILLATION,
PLASMA WAVE, RF FIELD, SURFACE WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/1839

STEP NO--AU/0000/70/010/000/0075/0080

CIRC ACCESSION NO--AP0101886

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0101886

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONSIDER THE LONG WAVE OSCILLATIONS OF A COLD BOUNDED PLASMA AGAINST A BACKGROUND OF STEADY STATE ELECTRON OSCILLATIONS. THE PROBLEM IS SOLVED IN A NONLINEAR APPROXIMATION WITH RESPECT TO AN EXTERNAL HIGH FREQUENCY FIELD. IT IS FOUND THAT, AS IN THE CASE OF A CONSTANT CURRENT, THE SURFACE WAVES ARE UNSTABLE. FACILITY: GOSUDARSTVENNYI KMOITET PO ISPOL'ZOVANIJU ATOMNOI ENERGII, FIZIKO TEKHNICHESKII INSTITUT, SUKHIMI, GEORGIAN SSR.

UNCLASSIFIED

USSR

MIRJLLIN, R.G., SIDOROV, V.V.

UDC 621.396.24:525.53

"Comparison Of The Characteristics Of Ultrashort Wave Signals Reflected From the E_c Layer And Meteor Trails"

V sb. Meteor. rasprostr. radiovoln (Meteor. Propagation Of Radio Waves--Collection Of Works), Issue 8, Kazan', Kazan University, 1971, pp 59-65 (from RZh--Radioelektronika, No 9, Sept 1971, Abstract No 9A192)

Translation: In connection with the fact that on the tracks [traces] of meteor burst communication, transmission of signals is sometimes possible by means of reflection from the sporadic E layer, a comparative study is made of the characteristics of signals reflected from this layer and from meteor trails. The fill factor of the reflected signals (the ratio of the time of existence of the reflected signal to the time of observation) is measured. Distribution curves are presented for the azimuth angles of the reflected signals; it is possible to use the differences between curves corresponding to both types of propagation for separation of these types. The distribution differs insignificantly for the angles of elevation. It is established that the maximum values of the amplitude of the signals dependent upon the sporadic layer exceed the signals from the meteor trails by 2 orders of magnitude; consequently, during reception it is necessary to use an automatic gain control. 2 ill. 4 ref. N.S.

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USSR

UDC 621.371.532

PLEUKHOV, A.N., SIDOROV, V.V.

"Effect Of Conditions In The Ionosphere On Meteoric Propagation Of Radio Pulses"

V sb. Meteorn. rasprostr. radiovaln (Meteoric Propagation Of Radio Waves--Collection Of Works), Issue 8, Kazan, Kazan University, 1971, pp 66-75 (from RZh-Radictekhnika, No 9, Sept 1971, Abstract No 9A193)

Translation: A computation is made of distortions of signals with oblique incidence at the ionosphere and reflection from a meteor trail. Because of absence in the atmosphere of abrupt changes of the gradient of the refractive index, the approach of geometrical optics is used during the computation. It is determined that for radio pulses with a small spectrum width, it is possible to neglect the distortions in the atmosphere; with a wide spectrum and long routes [traces], it is necessary to take them into account. 3 ill. 8 ref. N.S.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE DISTRIBUTION OF ORBIT PARAMETERS AND THE CHANGES IN INCIDENT
METEOR PARTICLE FLUX DENSITY -U-
AUTHOR--(03)-ANORIANOV, N.S., PUPYSEV, U.A., SIDOROV, V.V. S
COUNTRY OF INFO--USSR
SOURCE--ROYAL ASTRONOMICAL SOCIETY, MONTHLY NOTICES, VOL. 148, NO. 2,
1970, P. 227-237
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--ORBIT PARAMETER, METEOR, ASTRONOMIC OBSERVATORY, METEOR
RADIANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1481 STEP NO--UK/0000/70/148/002/0227/0237
CIRC ACCESSION NO--AP0125109
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER PRESENTS THE RESULTS OF MEASUREMENTS, MADE AT THE KAZAN RADIO ASTRONOMY OBSERVATORY (USSR), OF THE ORBITS OF METEORS AND THE INCIDENT FLUX OF METEORIDS. TWO NEW RADIO METHODS HAVE BEEN USED WHICH REMOVE THE SENSITIVITY LIMITATIONS OF A BACK SCATTER RADAR FOR FAINT AND FAST METEORS. THIS IMPROVES THE STATISTICAL RELIABILITY OF THE FLUX MEASUREMENTS. THE ELIMINATION OF VELOCITY SELECTION HAS NOT RESULTED IN CONSIDERABLE CHANGES IN THE DISTRIBUTIONS OF ORBIT PARAMETERS. OBSERVATIONS FOR MANY YEARS HAVE SHOWN THAT SEASONAL PECULIARITIES IN THE DISTRIBUTIONS OF SPORADIC METEOR RADIANTS OVER THE CELESTIAL SPHERE AND THE AVERAGE INCIDENT METEOR PARTICLE FLUX VALUE REMAIN UNCHANGED FROM YEAR TO YEAR.
FACILITY: KAZANSKII GOSUDARSTVENNYI UNIVERSITET, KAZAN, USSR.

UNCLASSIFIED

Acc. Nr.: AP0042373

Ref. Code: UR 0454

JPRS 50162

Study of Orbits of Small Meteor Bodies by Oblique Scattering Method

(Abstract: "Study of the Orbits of Small Meteor Bodies by the Oblique Scattering Method," by N. S. Andrianov, V. P. Popova and V. M. Sidorov, Kazakh State University; Moscow, Astronomicheskii Vestnik, Vol IV, No 1, 1970, pp 43-48)

The authors proposed the oblique scattering method for studying the orbits of small meteor bodies at the IAU Symposium No 33 in 1967; this paper now describes practical investigations of the method. Since 1965 the method has been used in measuring 3,200 radiants and the velocities of individual sporadic meteors brighter than approximately $+8^m_r$. The mean square errors for measuring radiant coordinates are $2''.5$ and for velocity 1.5 km/sec. These estimates were confirmed on the basis of observations of the Geminids stream. The radio magnitude of a meteor was estimated using the formula $m_r = 40 - 2.5 \log \sigma_m$, where σ_m is the electron density at the point of maximum ionization. Using the measured radiants and velocities, an electronic computer was used in calculating the orbits for 1,090 meteors brighter than approximately $+6^m_r$ and for 500 meteors brighter than approximately $+8^m_r$. In contrast to the radar method, the new radio method makes it possible to observe faint meteors having great velocities and

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evaluation of observational selection is more precise. The determined distributions of orbital elements for the most part coincide with the distributions obtained by the radar method. There are differences in details, attributable to different selection conditions and a difference in the sensitivity of the apparatus used. For example, the i and e distributions in these observations are considerably closer to photographic data than to radar data. The percentage of short-period orbits (with a $\angle 1$) was even greater than in radar observations.

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USSR

UDC 621.317.77

MIKHAYLOV, B. K. and SIDOROV, V. V:

"Measuring the Relative Phase Instability of the Meteoric Channel in Frequency and Polarization Separation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972, pp 527-530 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A425)

Translation: Results are given of measurements of the time course for the difference in phase of coherent signals in two receiver antennas with orthogonal polarization. The data obtained may be used in the design of meteor systems using polarization or frequency separation. Four illustrations, bibliography of two.
A. L.

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USSR

UDC 576.6+576.895.42+576.851.71

AVAKYAN, A. A., SIDOROV, V. Ye., and CHEBANOV, S. M., Gamaleya Institute of Epidemiology and Microbiology, USSR Academy of Medical Sciences, Moscow

"Electron-Microscopic Study of Intracellular Symbiosis of Rickettsia-Like Symbionts and Argasid Ticks"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 1973, pp 707-710

Abstract: Study of the ultrastructural organization of rickettsia-like symbionts of the genus Wolbachia (obligate inhabitants of cells in tick ovaries, Malpighian tubules, and other organs) in several tick species (*Alveonatus lahorensis* Neumann, *Argas persicus* Oken, and *Ornithodoros papillipes* Birulia) showed that the developmental cycle of the symbionts in all three tick species consists of three stages: (a) reproduction, (b) conservation, and (c) activation. The size of the symbiont population is regulated by the host in all stages of their combined existence. The number of symbionts increases after the ticks feed, but the former pass through the initial stage (binary fission) in only a comparatively few cells that contain cavities in which new parasite colonies can form; the bulk of the population remains in the conservation stage. Fasting the
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USSR

AVAKYAN, A. A., et al., Doklady Akademii Nauk SSSR, Vol 211, No 3, 1973,
pp 707-710

ticks results in a steady decrease in the number of symbionts, as shown by the appearance and subsequent increase in colonies with degenerating symbionts. Thus, the numbers of the symbionts-mutualists remain under the host's control and never reach the level that might threaten its life.

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Entomology

UDC 576.895.2.086.12

USSR

CHEBANOV, S. M., and SIDOROV, V. Ye. Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"A Device for Processing and Embedding Several Preoriented Blood-Sucking Arthropod Organs in Epoxy Resins"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 1, Jan/Feb 72, pp 113-114

Abstract: This device takes advantage of the fact that organs placed on a gelatin film tend to remain fixed in place. It consists of a 26 mm square mold box 5 mm high with walls 1 mm thick. It is partitioned into 5 rectangular sections by walls 4 mm high, which can in turn be subdivided into 2-3 more sections with transverse walls 1.5 mm high. After acetone treatment and rinsing, the box is dipped in 1-2% gelatin-water solution, excess is removed, and it is allowed to dry. Organs removed from ticks in Hank's solution under a stereomicroscope are oriented on the gelatin floor of one section with a minimum quantity of fluid. The section is then filled with fixing fluid, after which the organ sticks permanently to the gelatin while all subsequent treatment and embedding operations are carried out. The box can be reused, or employed to store embedded specimens.

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UDC: 621.315.592

USSR

ZOLOFURHIN, A. A., MIHEVSKIY, L. S., SMOL'SKIY, I. L., and SIDOROV, Yu. A.

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

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

Abstract: Experiments are described for the detection of effects connected with impure atmospheres by generating supersaturation in silicon crystals with various contents of oxygen with iron impurities. The reason for this is that extreme dislocations in germanium can only be obtained for a short time after low-temperature thermal shock without such atmospheres. This investigation was conducted by analyzing the temperature dependence of the Hall effect. The specimens used were monocrystals of n and p type silicon with minimum resistivities of 20 ohm.cm, and alloyed with phosphorus or boron. They were cut in the form of bars measuring 3x3x18 mm and were deformed, before cooling, in an argon atmosphere at 650° C under constant compression stress along the /100/ direction. Further data on the preparation of the specimens is 1/2

USSR

UDC 621.391.26:621.391.822.3

SIDOROV, YU.YE.

"Optimum Algorithms Of The Detection Of Radar Signals In Noise Of Unknown Power"

Kiyev, Izv. VUZ:Radioelektronika, Vol XVI, No 2, Feb 1973, pp 101-104

Abstract: The algorithms of the detection of radar signals obtained is characterized by important properties which determine its efficiency under real conditions of observation and which make it possible to automate the process of detection. These properties are: 1) It does not depend on a priori unknown powers of the noise and the signal parameters; 2) The probability of a false alarm α is a constant with any actual noise power; and 3) It has the maximum probability of correct detection with any signal-to-noise ratio. It is shown that the efficiency of operation of the detector is increased with the growth of n .
4 ref. Received by editors, 18 Jan 1972.

1/1

- 90 -

SIDOROV, Yu. G.

5 PRS 68205
L. 73

VII-4b. EFFECT OF GROWTH CONDITIONS AND GAS ETCHING ON THE CARRIER DISTRIBUTION IN THE GALLIUM ARSENIDE LAYERS

Article by V. N. Zil'bin, G. I. Ivalkin, V. I. Yudasyev, Yu. G. Sidorov, Novosibirsk; Novosibirsk, III Sibirskoye po Proissessam Rozita i Elektroniki Poluprovodnikov Khimicheskoye Prilozheniya, 1977 June, 15(72), p 91]

The methods of electric breakdown with respect to the carrier concentration and Hall measurements were used to investigate the effect of the conditions of formation of gallium arsenide epilayers; layers in the open chloride system on the electrophysical properties and the concentration profile of these layers. The n⁺ substrates were used alloyed with tellurium, tin and silicon. The layers grown on high-resistance substrates were also investigated.

It was found that in the growth temperature range of 765 to 725°C the carrier concentration in the layers decreases with temperature. The dependence of the nature of the concentration distribution of the carriers in the epilayers of gallium arsenide grown on n⁺ substrates alloyed with different admixtures was presented as a function of the crystallization temperature of the films.

SIDOROV, Yu.G.

SPRS 59308
6-73

3

31-44. POSSIBLE SOURCE OF UNCONTROLLED ALLOYING OF EPITAXIAL LAYERS OF GALLIUM ARSENIDE IN THE GAS TRANSPORT METHOD

Article by Yu. G. Sidorov, S. A. Dvornichik, I. F. Yastil'yina, Novosibirsk; Novosibirsk, III Department of Protection from the Siberian Federal Scientific Center of the Academy of Sciences, 12-17 June, 1972, p 90

This paper was devoted to determining causes as a result of which non-reproducibility of the properties of the gallium arsenide layers and the growth conditions of high-quality layers in the gas transport method take place. A study was made of the effect of different parameters (the deposition temperature, the gas phase composition) on the electrophysical properties of the layers. The possibility of alloying the epitaxial layers of gallium arsenide with oxygen is discussed.

SIDOROV, Yu. G.

SPRS 59208
6-73

2

X-14. ALLOYING THE GALLIUM ARSENIDE LAYERS WITH TIN IN THE GAS TRANSPORT METHOD

[Article by Yu. G. Sidorov, L. P. Vasil'yeva, Novosibirsk; Novosibirsk, III Symposium on Progress in Radio Physics, 1974, p 143]

When alloying gallium arsenide layers with tin, the electron concentration was obtained from 10^{16}cm^{-3} to 10^{19}cm^{-3} . The results are compared with the equilibrium level of alloying calculated from thermodynamic data. A study was made of the possibility of using tin to grow multilayered structures.

USSR

UDC 536.421.4+536.421.1

ALEKSANDROV, L. N., SIDOROV, Yu. G.

"Mechanism of Epitaxial Crystallization Through Chemical Reactions"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations--collection of works) Minsk, "Nauka i tekhn." 1971, pp 80-85 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E395)

Translation: On the basis of data of electron microscope investigation of the generation of epitaxial Ge and GaAs layers in the gas-transport method, the effect of supercooling (S) and the disorientation of seeds on the velocity of their formation is computed. It is shown that with an increase in S , an increase is obtained in the generation rate and the formation probability of seeds disoriented with respect to the substrate. The minimum thickness of the solid film is reduced.

1/1

USSR

UDC 621.315.592:546.19'681

ALEKSANDROV, L. N., and SIDOROV, Yu. G.

"Formation and Growth of Thin Epitaxial Layers (Homoepitaxial Semiconductors)"

V sb. Protessy rosta kristallov i plenok poluprovodn. (Procedures for the Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk, 1970, pp 14-26 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B62)

Translation: An analysis of the distinctive features of the course of a homoepitaxial process on the surface of semiconductor crystals shows that under actual conditions of deposition of the film, the mechanism of 3-dimensional nucleation is principally realized as the result of the presence of impurities adsorbed by the surface and also as a result of the probability of disorientation of the lattice of the nucleus and substrate. Subsequent growth of the nucleus as well as epitaxy on the pure sections of the substrate surface can take place by combination of the individual atoms or by a 2-dimensional mechanism of laminar growth (TG). The existence of imperfections and defects on the surface considerably decreases the necessary work for their formation. For quasispherical nuclei, small departures from the surface (111) should facilitate TG, and transition to the planes (110) or (100) should hinder it. For rectangular nuclei, transition to the surfaces (110) and (100) assists TG. Experimental studies of autoepitaxial GaAs principally show a 3-dimensional character of nucleation at surface (111) and the appearance of individual sections of TG at the surfaces

1/2

USSR

ALEKSANDROV, L. N., and SIDOROV, Yu. G., Protessy rosta kristallov i plenok poluprovodn. (Procedures for the Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk, 1970, pp 14-26 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B62)

displaced from (111). Basically, the 3-dimensional growth of the film is the cause of the formation of the wide transition region between the film and the substrate which is marked by the discontinuity of the electrophysical properties. 15 ref.V.G.

2/2

- 60 -

USSR

UDC 546.284.544.120.151

ALEKSANDROV, L. N., SIDOROV, Yu. G., and KRIVOROTOV, Ya. A., Institute of Semi-conductor Physics, Siberian Department of the Academy of Sciences USSR

"Etching of Germanium With Tetraiodo-Germanium at Low Pressures"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol. 1, No. 3, Jun 70, pp 1056-1060

Abstract: Gravimetric and electron-microscopic investigations of the etching of Ge with GeI_4 at low pressures were carried out according to a method using a quartz reactor connected to a vacuum system, making it possible to produce a residual pressure of $\sim 10^{-5}$ mm Hg. The etching rate was determined by the flow rate of surface processes. The relation of etching rates of planes with different orientation varies with changing temperature. The initial plane (111) etching rate reaches a minimum at $< 600^\circ$ K. The variation of the etching rate with time is combined with special features of the development of surface holes. An expression is derived which characterizes the kinetics of Ge etching with GeI_4 .

1/1

USSR

UDC: 621.741.3

S
SIDOROV, YU. I., UMRIKHIN, P. V., STARTSEV, V. A., and KAZAKOVA, I. I.

"Specifics of Physical-Chemical Processes During Surface Alloying of Steel Castings with Vanadium"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 125-127

Abstract: The physical and chemical processes occurring during surface alloying of steel castings with vanadium, reduced from vanadium-containing converter slag by silicon, calcium, and aluminum, were investigated. The slag was included as part of a paint applied to the surface of the casting mold. Production tests showed that the vanadium can penetrate 40 mm into the casting and can increase wear resistance by 1.5 times. One illustration; two tables; three biblio. refs.

1/1

USSR

UDC 621.396.6-181.5

S
SIDOROV, Yu. I., GUSAKOV, V. M., KOROLEV, M. A., FEDORENKO, Yu. S.

"Semiconductor Integrated Circuits Based on MOS Transistors"

Elektron. prom-st'. Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 34-38 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V179)

Translation: The authors survey microcircuits based on MOS transistors put out by non-Soviet companies, pointing out applications and giving parameters. Comparative characteristics are given for microcircuits based on MOS and bipolar transistors. The use of MOS microcircuits in memory units is discussed. Two illustrations, three tables, bibliography of 24 titles. N. S.

1/1

USSR

UDC 621.391.2

SIDOROV, YU. YE.

"Unbiased Detection Rule for Radar Signals in Noise with Unknown Power"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2186-2189

Abstract: A study was made in which the operation of a detector is based on the comparison ("contrast") of pulses reflected from n elementary radar resolution segments with respect to range which permits an increase in the detection efficiency. The initial prerequisites are as follows: 1) the radio pulses reflected from n adjacent elementary range segments fluctuating according to the Rayleigh law are observed, and the pulse dispersion is a priori unknown; 2) additive normal noise with unknown power (dispersion) is present, and the noise dispersion over the extent of the n segments is constant; 3) the distance is successively "scanned," and it is assumed that the target can be only in the last, n -th, of the compared range segments where the pulse is reflected from the range segment containing the target are defined by the sum of two statistically independent components one of which corresponds to the echo from the target (the signal), and the other, the echo from the terrain (noise); 4) incoherent processing of the received oscillations is carried out; at points in time separated by the pulse repetition period, independent readings $1/2$

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USSR

SIDOROV, YU. YE., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2186-2189

of U_i and V of the envelopes (or the readings of U_i^2 and V^2 of the squares of the envelopes) are taken from the receiver detector output for $i = 1, 2, \dots, n - 1$ and n -th observed range segments respectively, and the decision of the presence or absence of a target is made with respect to each individual observation of the values of U_i and V . The radar detection rule is obtained which has properties defining its fitness under real observation conditions and permitting automation of the detection process: a) it does not depend on the a priori independent power of the noise and the signal parameters; b) the probability of false alarm α is constant for any actual noise level; c) it has the greatest probability of correct detection for any signal/noise ratio. The operating efficiency of the detector increases with an increase in n .

2/2

PROCESSING DATE--18SEP70

UNCLASSIFIED

1/2 013

TITLE--STRUCTURE AND MECHANISM OF FORMATION OF OLIGOPHOSPHONATES FROM
DIALKYL CHLOROPHOSPHITES AND ALDEHYDES -U-

AUTHOR--(03)-LEVIN, YA.A., GOZMAN, I.P., ~~SIBIROVA, E.E.~~

S

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 173-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALDEHYDE, ORGANIC PHOTPHORUS COMPOUND, CHLORINATED ORGANIC
COMPOUND, HETEROCYCLIC OXYGEN COMPOUND, BLIGOMER, CHEMICAL
REACTION MECHANISM, EXOTHERMIC REACTION, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1628

STEP NO--UR/0062/70/000/001/0173/0175

CIRC ACCESSION NO--AP0100238

UNCLASSIFIED

PROCESSING DATE--18SEP70

UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0100238
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. MIXING EQUIMOLAR AMTS. PRCHO AND
(ETO) SUB2 PCL RESULTED IN EXOTHERMIC REACTION AND LOSS OF ETCL,
COMPLETED BY 4 HR AT 100DEGREES, TO YIELD AFTER FURTHER 1 HR AT
170DEGREES FINALLY IN VACUO, A VISCOUS OLIGOMER (P(D)(OR)CHR PRIME1 O)
SUBN (I) (R EQUALS ET, R PRIME1 EQUALS PR) (IA); HEATED WITH CONCO. HCL
4 HR THIS GAVE 95PERCENT PRCH(OH)PO SUB3 H SUB2, M. 161-2DEGREES;
PYROLYSIS OF IA AT 250-70DEGREES IN VACUO GAVE 10PERCENT II (R EQUALS
ET, R PRIME1 EQUALS PR), B SUBO TIMES O35 123-6DEGREES, N PRIME2O SUBD
1.4578, D PRIME2O 1.1616. SIMILARLY, REACTION WITH BZH GAVE I (R EQUALS
TO 90DEGREES PHCH(OH)PO SUB3 H SUB2, M. 172-3.5DEGREES. SIMILARLY WAS
PREPD. THE OLIGOMER FROM RHO-O SUB2 NC SUB6 H SUB4 CHO AND (ISQ-BUO)
SUB2 PCL, A YELLOW SOLID. A SCHEME FOR FORMATION OF I WAS GIVEN.

UNCLASSIFIED

UDC 576.858.25.095.38:576.895.42

USSR

L'VOV, D. K., GROMASHEVSKIY, V. I., SIDOROVA, G. A., TSIRKIN, Yu. M.,
CHERVONSKIY, V. I., GOSTENSHCHIKOVA, G. V., and ARISTOVA, V. A., Institute
of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks
Ornithodoros Coniceps in Azerbaydzhan"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros
coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in
nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago
in the Caspian Sea. So far, four strains -- prototypes LEIV-28A, -35A, -30A,
and -46A -- were analyzed and found to be identical. They do not agglutinate
goose erythrocytes. Serological identification tests performed on the
LEIV-46A prototype revealed that this strain belongs to the antigenic complex
of Chenunda virus of the Kemerovo group. According to the results of complement
fixation and neutralization reaction tests, the virus differs from Chenunda,
Punta Salinos, Mono Lake, Kemerovo, Tribec, Lipovnik, and Wad Medani viruses.
The new virus has been named "Baku virus."

1/1

- 35 -

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--USE OF THE FLAG METHOD FOR STUDY OF THE DISTRIBUTION OF SANDFLIES
 ON THE SURFACE OF SANDY DESERT -U-
 AUTHOR--(03)-DUBROVSKIY, YU.A., KOMAROVA, L.V., SIDOROVA, G.A.
 COUNTRY OF INFO--USSR
 SOURCE--ZOOLOGICHESKIY ZHURNAL, 1970, NR 1, PP 89-95
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--SAND FLY, DESERT, POPULATION LEVEL, MEASUREMENT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3003/1199 STEP NO--UR/0439/70/000/001/0089/0095
 CIRC ACCESSION NO--AP0130214
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 015

CIRC ACCESSION NO--AP0130214

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SANDFLY POPULATION IN NATURAL FOCI OF CUTANEOUS LEISHMANIASIS IN EASTERN TURKMEN SSR WAS DETERMINED WITH FLAGS OF STICKY PAPER ON TAMPED GROUND. STUDIES WERE CONDUCTED IN MAY AND JUNE, 1968, WITH 20 TIMES 30 CM FLAGS MOISTENED WITH CASTOR OIL. THE NUMBER OF SPECIMENS OF PHLEBOTOMUS CAUCASICUS AND SERGENTHOMYIA GREKOVI ON THE SURFACE OF BURROWS INHABITED BY GREAT GERBILS (THE CHIEF DWELLING PLACE OF SANDFLIES IN THIS AREA) WAS 2 TO 7 TIMES GREATER THAN THE NUMBER OF SPECIMENS ON THE SURFACE OF UNINHABITED BURROWS. BETWEEN BURROWS, THE SANDFLY DENSITY WAS 2.1 TIMES SMALLER THAN ON THE SURFACE OF UNINHABITED BURROWS. THE SANDFLY POPULATION WAS IDENTICAL ON SLIGHT ELEVATIONS AND DEPRESSIONS OF THE DESERT FLOOR RANGING IN HEIGHT FROM 3-4 TO 8-10 M. NO DIFFERENCES IN DISTRIBUTION OF SANDFLIES SPECIES, SEX OF DEVELOPMENTAL STAGE ON VARIOUS LANDSCAPES FEATURES OR DIFFERENCES IN ADAPTAION TO BURROW SURFACE OR SPACES BETWEEN BURROWS WERE FOUND. IT WAS CONCLUDED THAT THE VERY EVEN DISTRIBUTION OF SANDFLIES WAS CAUSED BY THE VERY SLIGHT VARIATION IN COMPOSITION AND HUMIDITY OF THE GROUND IN VARIOUS PARTS OF THE LANDSCAPE.

FACILITY: INSTITUTE OF
 EPIDEMIOLOGY AND MICROBIOLOGY, AMN, SSSR, MOSCOW. FACILITY:
 INSTITUTE OF FRIENDSHIP OF PEOPLES IMENI PATRICE LUMUMBA, MOSCOW.

UNCLASSIFIED

USSR

UDC: 538.4

KIRILLOV, V. Kh., SIDOROVA, I. S.

"Solving a Boundary Problem in Magnetohydrodynamics"

V sb. Materialy Vses. konferentsii po krayev. zadacham (Materials of the All-Union Conference on Boundary Problems--collection of works) Kazan', Kazan University, 1970, pp 142-145 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2B2)

Translation: The boundary problem is considered of finding the harmonic functions ψ_1 and ψ_2 , defined in the regions $-h_1 < y < y_1$ and $y_1 < 0 < h_2$, and satisfying the boundary conditions: $\psi_1 = q_1$ at $y = -h_1$; $\psi_2 = q_2$ at $y = h_2$; $\psi_1 = 0$, $\psi_2 = 0$; $(\nabla\psi_1)^2 + (\nabla\psi_2)^2 = 2gy_1 + \text{const}$ at y_1 (here, h_1 , h_2 , q_1 , q_2 , and g are constants, and the functions $y_1 = y_1(x)$ should be determined from the solution of the problem). The formulated system of equations describes the propagation of nonlinear waves on the surface of an ideally conducting, incompressible, nonviscous fluid of finite depth, bounded by a region containing a magnetic field oriented along the direction of wave motion. A. B. Vatazhin

1/1

USSR

UDC: 621.373:530.145.6

KURCHATOV, Yu. A., OSIPOV, A. S., SIDOROVA, L. A.

"Determination of the Permissible Spatial Mismatch of a System of Two Open Resonators"

Elektron. tekhnika. Nauchno-tekhn. sb. kontrol'no-izmerit. apparatura (Electronic Technology. Scientific and Technical Collection. Monitoring and Measuring Equipment), 1970, vyp. 2 (20), pp 84-88 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D252)

Translation: An expression is presented which defines the relative change in the coupling factor between two open spherical resonators matched by a lens when they are mutually displaced with respect to the matched state. Experiments are described for empirically checking this relationship on an installation with a laser and a spectrum analyzer. Satisfactory agreement is found between theory and experiment. Four illustrations, one table, bibliography of three titles. N. S.

1/1

USSR

UDC 612.833.81+612.59

S
SIDOROVA, L. M., Chair of Normal Physiology, Donetsk Medical
Institute imeni A. M. Gor'kiy

"The Effect of Adaptation to Heat on Some Forms of External and
Internal Inhibition"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 1, 1970, pp 313-315

Abstract: Defensive motor reflexes were rapidly extinguished in four dogs exposed to a high ambient temperature (43° C). Rapid extinction continued through the period of adaptation to heat (30 days). As soon as the training was over, relatively slow extinction reappeared. The high ambient temperature decreased the latency of the conditioned reflexes, disinhibited differentiation, promoted proactive inhibition (manifested by a marked weakening of the conditioned reflexes to strong stimuli), and elevated the animals' body temperature. These changes were quite pronounced during the first few days of exposure to heat, but disappeared in the course of training.

1/2

USSR

UDC 614.2

SIDOROVA, L. N., RUZIYEV, Kh. R., NOVOKRESHCHENOVA, F. A., and AYDARALIYEV, K. A., Ministry of Health Kirgiz SSR

"From the Fight Against Malaria and Steps Taken to Prevent the Disease From Entering Kirgizia"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1972, pp 29-32

Abstract: The Soviet Central Asian republic of Kirgizia had long been an endemic focus of malaria. In 1933, for example, it accounted for 30% of all cases of infectious diseases with a morbidity rate of 1.090 per 10,000 population. The rate began to decline after World War Two because of systematic efforts to eradicate the disease and by 1959 not a single local case was recorded throughout the republic. To prevent the importation of malaria, all persons arriving from parts of the Soviet Union where it is still prevalent as well as visitors from Africa and Asia are registered and carefully examined. All persons with a history of the disease are checked from time to time. Other steps include the drainage of swamps within a radius of 3 to 5 km from inhabited localities, introduction of gambusia and grass carp into bodies of water infested with mosquito larvae, and continuous monitoring of changes in the mosquito population to determine whether active control measures may be required.

1/1

Radiation Chemistry

UDC 541.(15+64):542.952

USSR

KABANOV, V. YA., and SIDOROVA, L. P., Institute of Physical Chemistry, Academy of Sciences USSR

"The Kinetics of Radiation-Induced Ionic Graft Polymerization"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 6, Jun 73, pp 1373-1377

Abstract: The kinetics of radiation-induced ionic grafting were studied on the example of the system polyethylene -- vinyl-n-butyl ether. The initial velocity of grafting was a function of the dosage rate in the first power, while the radiation-chemical yields of the graft polymer and of the initiating centers were independent of the dosage rate. The kinetic curves exhibited a period of inhibition that was associated with the presence of traces of H₂O. The activation energy of the reaction was -2.5 and -3.4 kcal/mole for low- and high-pressure polyethylene, respectively. The ionic mechanism of grafting was confirmed by kinetics corresponding to monomolecular chain termination, the negative activation energy values, and the highly effective

1/2

USSR

KABANOV, V. YA., et al, Vysokomolekulyarnyye Soyedineniya, Vol 15,
No 6, Jun 73, pp 1373-1377

inhibition of grafting by H₂O. The extent of grafting and the radiation-chemical yield were very low when the method of pre-irradiation of polyethylene in vacuo was applied. This also confirmed that grafting proceeded by an ionic mechanism. In the experiments conducted, irradiation was carried out with gamma-rays.

- END -

CSO: 1841-W

2/2

- 90 -

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTIONS OF PERFLUORO ACID HYDRAZIDES. II. REACTION OF PERFLUORO
ACID HYDRAZIDES WITH CHLORINE -U-
AUTHOR--(04)-SIDOROVA, L.P., TUMANOVA, A.V., GRINBLAT, M.P., LOPYREV, V.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. DRG. KHIM. 1970, 6(4), 705-6 S
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBOXYLIC ACID CHLORIDE, FLUORIDE, AZIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2155 STEP NO--UR/0366/70/006/004/0705/0706
CIRC ACCESSION NO--AP0125738
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 007

CIRC ACCESSION NO--AP0125738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PASSAGE OF DRY CL THROUGH CF
SUB3 CONHNH SUB2 IN MENO SUB2 GAVE CF SUB3 COCL, HCL, AND N. SIMILARLY,
CF SUB3 CF SUB2 CONHNH SUB2, CF SUB3 CF SUB2 CF SUB2 CONHNH SUB2, AND H
SUB2 NNHOC (CF SUB2) SUB3 CONHNH SUB2 REACTED TO GIVE THE CORRESPONDING
ACID CHLORIDES.
FACILITY: LENINGRAD. TEKHNOI. INST.
TSELLYUL.-BUM. PROM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--WELDING EQUIPMENT WITH VDNKH USSR -U-
AUTHOR--SIDKOVA, M.D. S
COUNTRY OF INFO--USSR
SOURCE--MOSCOR, SVAROCHNOYE PROIZVODSTVO, NO. 5, 1970, PP 51-53
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--WELDING EQUIPMENT, STEEL WELDING, LOW CARBON STEEL, STAINLESS
STEEL WELDING, ALUMINUM WELDING, COPPER WELDING, ARGON GAS WELDING,
CHROMIUM ALLOY, AUTOMATIC CONTROL SYSTEM/(U)T0304 WELDING TRANSFORMER,
(U)VKSM 1000 WELDING RECTIFIER, (U)JUGGICI WELDING MACHINE, (U)UPSR300
WELDING MACHINE, (U)PUG302 SEMIAUTOMATIC WELDER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605041/B09 STEP NO--UR/0135/70/000/005/0051/0053
CIRC ACCESSION NO--AP0142719

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142719

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME OF THE WELDING EQUIPMENT ON EXHIBIT IN THE PAVILION "ELECTROTECHNICAL INDUSTRY" AT THE WELDING EQUIPMENT FAIR COMMEMORATING THE 100TH BIRTHDAY OF LENIN IS DESCRIBED. DEVICES DESCRIBED ARE A WELDING TRANSFORMER, TYPE TD-304; A WELDING RECTIFIER VKSM-1000; A WELDING MACHINE TYPE UDG-101, DESIGNED FOR MANUAL ARGON-ARC WELDING OF STAINLESS STEEL, ALUMINUM, COPPER, AND THIN CHROMIUM ALLOYS, AND EQUIPPED WITH A CONTROL PANEL; A TWO COORDINATE SYSTEM FOR AUTOMATIC ARGON ARC WELDING; A MACHINE UPSR-300 FOR WELDING STAINLESS AND LOW CARBON STEEL VARYING IN THICKNESS FROM 1 TO 4 MM; A SEMIAUTOMATIC MACHINE KIT PDG-302 FOR ARC WELDING OF METALLIC STRUCTURES IN VARIOUS POSITIONS AND IN LOCATIONS DIFFICULT OF ACCESS, CAPABLE OF BEING CARRIED ON ONE'S BACK. OTHER SUCH DEVICES ARE ALSO LISTED, EACH WITH A SHORT DESCRIPTION, THE NAME OF THE PLANT THAT DEVELOPED IT, AND A SHORT LIST OF ITS SPECIFICATIONS.

UNCLASSIFIED

USSR

UDC 632.95

VASHKOV, V. I., SIDOROVA, M. V., KUZNETSOVA, R. A.

"Insecticide Activity of Dicresyl for Certain Types of Domestic Insects and Mosquitoes"

Sb. nauch. tr. Mosk. NII vaktsin i syvorotok (Collection of Scientific Works of Moscow Scientific Research Institute of Vaccines and Serums), No 22, 1972, pp 155-159 (from RZh-Khimiya, No 15, Aug 73, Abstract No 15N502)

Translation: Dicresyl (I) and chlorophos are approximately equivalent with respect to toxicity for bedbugs and roaches. The I is more effective in dust form than in emulsion form. The minimum dosage of I in powdered form causing 100% death of bedbugs is 0.01 and for roaches it is 0.5g/m². In emulsion form the I is effective against bedbugs in a dosage of 0.1 g/m² on nonsorbing surfaces and 1-2 grams/m² on sorbing surfaces. In laboratory tests the larvae and eggs of the housefly died after spraying a substrate with 0.2-0.3% emulsions of I (1 liter/m²). The winged Flies were resistant to I. The larvae of mosquitoes ages 1-2 and 3-4 died after 24 hours in bodies of water sprayed with emulsions of I in doses of 0.5-1 and 1-2 kg/hectare respectively. According to laboratory tests with winged mosquitoes *Aedes* spp., I is equivalent to baygon with respect to toxicity, 8 times more toxic than carbophos and twice as toxic as DDT.

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1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT79
 TITLE--BENZOYLATION OF P, BENZOYLANISOLE -U-
 AUTHOR--(03)-TSUKERVANIK, I.P., SIDOROVA, N.G., STEPNEVSKAYA, I.A.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. DRG. KHIM. 1970 6(3) 535-6
 DATE PUBLISHED-----70

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SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ANISOLE, BENZENE DERIVATIVE, BENZOYL CHLORIDE, CHEMICAL
 SYNTHESIS, FORMALDEHYDE, OXIDATION, CHROMIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEATING OF P-MEOC SUB6 H SUB4
OZ (I) WITH BZCL AND POWD. FE AT 220-40DEGREES GAVE 86PERCENT 2,4-BZ
SUB2 C SUB6 H SUB3 OME (II). THE STRUCTURE OF II WAS PROVEN BY THE
FOLLOWING SYNTHESIS: I TREATED WITH HCHO IN THE PRESENCE OF HCL AND
ZNCL SUB2 GAVE 1,2-(ME)CLCH SUB2 C SUB6 H SUB3 BZ WHICH WAS REACTED
WITH C SUB6 H SUB6 IN THE PRESENCE OF ALCL SUB3 TO GIVE 1,2-(ME)PHCH
SUB2 C SUB6 H SUB3 BZ (III). THE OXIDN. OF III WITH A CRD SUB3-ACDH
MIXT. GAVE II.

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BEZRODNYKH, A. A., KASPAROV, A. A., MAZUROV, V. I., KOCHETKOVA, T. A., RAZDVADOVSKIY, YE. F., SIDOROVA, N. V., KULIKOVA, T. P., GALITSINA, I. Z., ZANARAYEVA, T. V.

"Antifibrosis Effect of Polyvinylpyridine-N-Oxide as a Compound to Prevent the Development of Silicosis"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 52-53 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.874)

Translation: The polymers polyvinyl-pyridine-2- and 4-N-oxides had an effect on the degree of expression of histologic alterations in the early stages of the development of experimental silicosis (10 days) when administered intratracheally and, especially, hypodermically. These polymers normalized the indexes of the oxidation processes in the lung tissue and the myocardium. After one, three and six months of the experiment, the polymers with a molecular weight of 40,000 to 80,000 retarded the development of fibrosis, reduced the amount of neutrally soluble collagen and

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BEZRODNYKH, A. A., et al., Nauch. tr. Irkutsk. med. in-t, 1972, vyp 110, pp 52-53

normalized the amino acid composition of the lung tissue, the indexes of the oxidation phosphorylation and the activity of the intracellular enzymes. On intratracheal administration of polymers with a molecular weight of 50,000 to 1,500,000, the development of catarrhal bronchitis and bronchiolitis was noted.

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1/3 024
 TITLE--EFFECT OF A SODIUM IMPURITY ON THE ACTIVITY OF AN ALUMINUM, NICKEL,
 MOLYBDENUM CATALYST -U-
 AUTHOR--(02)-KATSOBASHVILI, YA.R., SIDOROVA, N.V.

PROCESSING DATE--18SEP70

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 241-4

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SODIUM, METAL IMPURITY, CATALYST ACTIVITY, ALUMINUM, NICKEL,
 MOLYBDENUM, CATALYTIC CRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1987/0411

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