USSR

ASLANOV, S. K., KOPEYKA, P. I., 3-y Vses. simpozium po goreniyu i vzryvu, 1971, 1971 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B131)

data is indicated. A thermodynamic analysis is also performed for the combustion products behind the transverse wave, and the axial propagation rate of the detonation is calculated considering the dissociation of the combustion products and variation of the exponent of the adiabats in the compression shocks.

2/2

USSR

ASLANOV, S. K.,

"Theory of Stability of Turbulent Combustion"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Aviatsionnaya Tekhnika, No 1, 1971, pp 60-62

Abstract: A mathematical analysis is made of the stability of the turbulent combustion process both in an isolated system and considering the face of the combustion chamber reflecting the sound waves excited by the flame. The feedback equations are derived on the basis of the mechanism of interaction of sonic disturbances inside the flame zone with its turbulent structure. Both the variation of the turbulent combustion rate and the variation of the length of the flame zone under the effect of hydrodynamic disturbances are considered in the calculation. As a result of conjugacy of the disturbed states in the flame analytical criteria for instability of the process are obtained with the help of the conservation laws. These criteria contain a constant coefficient which can be determined experimentally under the conditions of stationary turbulent combustion. The destabilizing effect of the reflecting front face of the combustion chamber of a jet engine is established. A comparison with the K. I.

1/2

ASLANOV, S. K., Izvestiya Vysshkkh Uchebnykh Zavedeniy -- Aviatsionnaya Tekhnika, No 1, 1971, pp 60-62

Shchelkin criterion obtained earlier for an isolated flame from physical analysis [K. I. Shchelkin, Ya. K. Troshin, Gazodinamika goreniya (Gas Dynamics of Combustion), USSR Academy of Sciences] reveals good comparison of the results.

UDC: 539.3

USSR

ASLANOV, S. K., Odessa

"Stability of Elastic-Plastic Waves in Solids"

Kiev, Prikladnaya Mekhanika, Vol 6, No 11, 1970, pp 54-58

Abstract: The stability of a shock wave in a solid body is studied as a
diverging elastic-plastic set of discontinuities. Two-dimensional per-
turbations are added to the primary movement of the media in the form of
elastic waves in the solid medium and hydrodynamic waves of the fluid state
of the material. Explicit criteria are produced which control the nature
of the stability of the waves of compression and relaxation in solids and
which include the elastic parameters, the equation of state of the process
and its intensity.

1/1

UDC 662.215.1-539.3

USSR

ASLANOV, S. K. (Odessa, Odessa State University)

"The Stability Theory of Burning Solid Fuel as Elastic Body"

Kiev, Akademiya Nauk UkrSSR. Prikladnaya Mekhanika, Vol 7, No 2, Feb 71, pp 94-99

Abstract: The stability of hard fuel burning with respect to two-dimensional disturbances, as a face transformation of its elastic medium into combustion products is investigated. The effect of the elastic body – gas medium interaction on their burning interface is accounted for by the laws of conservation and by conditions of solid fuel transition into a fluid phase, with the hydrodynamic nature of stresses. The necessary and sufficient stability criterium is established, which together with the dynamic characteristics of the burning process and the constant erosion, contains the elastic parameters of the fuel. The results obtained here agree well with available experimental data. 14 formulas, 2 figures, 11 references.

1/1

UDC 547.944/945

USSR

ASLANOV, S. M., Institute of Botany imeni V. L. Komarov, Academy of Sciences of the Azerbaydzhan SSR

"Glycoalkaloids and Saponins of Solanum Kieseritzkii"

Abstract: The authors investigate the chemical composition of the aerial part of Solanum Kieseritzkii, a variety of nightshade which grows in the Lenkoran'--Astarinskiy Rayon of the Azerbaydzhan SSR. A methanol extract of plant material gathered in the fruit-bearing stage was dried and treated with benzene and ether in a 4:1 proportion. Glycoalkaloids were precipitated by ammonia, and a methanol extract of the precipitate was eluted by a mixture of methanol and ammonia (1:3). The glycoalkaloid sum was 0.41%. Five substances were isolated from the glycoalkaloid sum by silica gel chromatography. Three of these are identified as solasodine, solamarginine and tomatine. The other two bases are as yet unidentified. The aerial part of the plant also yielded about 0.36% alcohol-soluble saponins. Acid hydrolysis of the saponin sum produced 0.203% aglycones. Plate chromatography showed that the aglycones are made up of four substances with R_f 0.45, 0.66, 0.68 and 0.68.

1/1

1/2   013   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--PROCEDURE FOR DETERMINING THE QUANTITY OF ADSORBED GAS BASED ON A
  CHANGE IN THE SPECIFIC WEIGHT OF THE GAS MIXTURE -U-
AUTHOR-(03)-ASLANOV, SH.S., MAMEDOV, YU.G., KHYDYRKULIEV, B.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(1), 49-52

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL ANALYSIS, GAS, NITROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1639   STEP NO--UR/0152/70/013/001/0049/0052

CIRC ACCESSION NO--AT0118618
                            UNCLASSIFIED

CIRC ACCESSION NO--AT0118618
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   A GAS CONDENSATE MIXT. WAS PASSED
THROUGH A COLUMN, CONTG. A WELL PACKED 1:1 CLAY SAND BED, UNTIL ITS
STAN., WHEN THE MIXT, WAS DISPLACED WITH N AT THE SAME PRESSURE.   THE
DISPLACEMENT WAS COMPLETED, WHEN THE OUTLET GAS HAD THE SP. GR. OF N.
THEN, THE ADSORPTION COLUMN WAS DISCONNECTED AND ITS PRESSURE WAS
GRADUALLY DECREASED BY LETTING OUT THE GAS, SAMPLES OF WHICH WERE TAKEN
AT DETD. PRESSURES.   THE SP. GR. OF THE SAMPLES WAS DETD. AT 1 ATM.   AS
THE PRESSURE IN THE COLUMN DECREASED, THE SP. GR. OF THE OUTLET GAS
DECREASED, VARYING BETWEEN THE SP. GR. OF THE GAS CONDENSATE MIXT. TO
THAT OF N, AS THE DESORBED GAS DURING THE PRESSURE DECREASE WAS
DISPLACED BY N.   HAVING THE SP. GR. OF THE GAS MIXT., THE VOL. SHARE OF
THE MIXT. AND N COULD BE DETD.   IN A SYSTEM WITH GAS CONDENSATE RATIO
2500:1, AT 301 ATM AND 293DEGREESK, THE SP. GR. OF THE MIXT. DECREASED
BY 10PERCENT DUE TO THE DESORBED GAS.   THE SHARE OF THE MIXT. IN THE
ADSORBENT PORES INCREASED WITH THE PRESSURE DECREASE AND AT 140 ATM,
16PERCENT OF THE PURE VOL. WAS OCCUPIED BY THE GAS.   THE HIGHER
DESORPTION OCCURRED WHEN THE PRESSURE DECREASED BELOW THAT OF MAX.
CONDENSATION (130 ATM).   IN CLAY STRATA, GREAT AMTS. OF GAS COULD BE
THUS ACCUMULATED DUE TO DIFFUSION AND ADSORPTION, WHICH ARE TO BE TAKEN
INTO CONSIDERATION FOR CALCG. THE GAS RESERVES.   FACILITY:
AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

1/2   025   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--ELECTRON MICROSCOPY LABORATORY -U-

AUTHOR--ASLANOVA, G.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, AUGUST 25, 1970, P 3, COLS 3-5

DATE PUBLISHED--25AUG70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--ELECTRON MICROSCOPE, PATHOLOGY, HEART, MEDICAL PERSONNEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1789   STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0138738
                         UNCLASSIFIED

CIRC ACCESSION NO--AN0138738
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON MICROSCOPY LABORATORY
OF THE CENTRAL SCIENTIFIC RESEARCH LABORATORY OF THE FIRST MOSCOW
MEDICAL INSTITUTE IMENI SECHENOV CONDUCTS RESEARCH IN THE MOST DIVERSE
MEDICAL FIELDS. THE LABORATORY IS HEADED BY DOCTOR OF MEDICAL SCIENCES
MITIN. CARDIAL PATHOLOGY IS ONE OF THE PROBLEMS THAT IS BEING STUDIED
AT THE LABORATORY. BESKROVNOVA, LABORATORY ASSOCIATE, STUDIES THE
EFFECT OF VARIOUS AMINES ON THE HEART, AS WELL AS TOXIC DOSES OF
ADRENALINE. KLEYMENOVA ANALYZES CELLS OF THE HEART AFFECTED BY
RHEUMATISM. SEKAMOVA DEVOTES HER TIME TO THE CRASH SYNDROME AT THE
ULTRA STRUCTURAL CELL LEVEL, AND MYASTHENIA. I. MOROZOV RESEARCHES THE
ELECTRONARCOSIS. TWO PHOTOGRAPHS ARE GIVEN.

UNCLASSIFIED

USSR   UDC 678.06-419.8:677.521.01:53

ASLANOVA, M. S., NATRUSOV, V. I., ROGINSKIY, S. L., and KHAZANOV, V. Ye.

"Study of the Effect of Some Factors on the Strength of Fiberglass During
Compression by the Method of Mathematical Planning of the Experiment"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 60-63

Abstract: The effect of some physico-mechanical properties of fiberglass
and the binder on the strength during compression of fiberglass was studied
by means of the mathematical planning of an experiment. Regression equa-
tions are reported for the maximum strength of the fiberglass during com-
pression as functions of the fiber diameter, modulus of resilience of the
binder and the fiber and adhesive strength of the binder in relationship
to the glass fiber. On the basis of the analysis carried out it was
possible to optimize the values of basic variables and to determine their
qualitative and quantitative effects on the strength of fiberglass. It
was established that it is possible to increase the strength of fiber-
glass during compression by using enlarged fibers with a diameter of 18 mc.

Polymers and Polymerization

KLIMENTOVA, YU. P., KIRICHENKO, L. F., ASLANOVA, M. S.,
MYASNIKOV, A. A., CHERTOV, V. M., VYSOTSKIY, Z. A., Institute of
Physical Chemistry, imeni L. V. Pisarzhevskiy, Ukr. Academy of
Sciences; and All-Union Scientific-Research Institute of Fiber-
glass and Fibers

"Effect of Hydrothermal Treatment on the Texture of Silicon
Fibers"

Abstract: The texture of glass fibers strongly depends on their
origin natural or basaltic glass. The texture of silicon glass
is dealt with here, as it is affected by hydrothermal processing.
A number of physical features are taken into account.

It is shown that with hydrothermal processing of fine-pore silicon
fibers at 100-300°C, and autoclaving for 3-24 hours, increase in
either of these factors will secure a substantial reduction in
the size of micropores and in the specific surface of the fiber,
1/2

USSR

KLIMENTOVA, YU. P., et al, _Zhurnal Prikladnoy Khimii_, Vol 44,
No 8, 1971, pp 1725-1730

which means also that the volume of sorption space falls off.
Hydrothermal processing at 200°C will produce a good number of
ultrapores in silicon fibers, and these will be accessible to
the water molecules, though not to those of benzene.

Precise data on textural characteristics of silicon fibers accom-
pany the paper.

2/2

UDC 666.189.2:666.11.01:541.27

USSR

ASLANOVA, M. S., and KOSTAREVA, S. I.

"Study of Kinetics of Leaching of Sodium-Aluminum-Borosilicate Fibers and Structural Peculiarities of the Fibers After Leaching"

Moscow, Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1507-1512

Abstract: The area of glass formation and fiber formation in the system SiO_2 $-Al_2O_3$ B_2O_3 $-Na_2O$ was studied, and the kinetics of leaching of sodium-aluminum-borosilicate fibers was investigated. The leaching process of sodium aluminum borosilicate fibers follows a diffusion rule with selective solubility of low-melting components. The four-coordination state of the aluminum ion in the structure of sodium-aluminum-borosilicate and leached aluminosilicate fibers was established by chemical analysis and infrared spectral analysis. Leached aluminosilicate fibers were produced, with approximately the same chemical composition as mullite, differing in their high heat resistance (sintering temperature over $1,700°C$) and presence of pores with diameters of up to 200-240 A.

1/1

1/2   011   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--RIGHT ASCENSIONS AND FLUX DENSITIES OF 30 RADIO SOURCES AT A
    FREQUENCY 60 MHZ -U-
AUTHOR-(03)-ASLANYAN, A.M., MALUMYAN, V.G., SANAMYAN, V.A.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY
    SSR, 1970, NR 41, PP 9-12
DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--COSMIC RADIO SOURCE, GALAXY, SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0072   STEP NO--UR/2620/70/000/041/0009/0012

CIRC ACCESSION NO--AP0114468
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0114468
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RIGHT ASCENSIONS AND FLUX
DENSITIES OF 30 RADIO SOURCES AT A FREQUENCY 60 MC-S ARE MEASURED.
SPECTRA OF 13 SOURCES IN THE RANGE 38-412 MC-S HAVE BEEN INVESTIGATED.
SIX OF THE 7 RADIO SOURCES IDENTIFIED WITH RADIOGALAXIES HAVE STRAIGHT
SPECTRA. THREE OF THEM ARE DOUBLE OR MULTIPLE RADIO SOURCES.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

TITLE--EFFECT OF ULTRAVIOLET IRRADIATION ON THE STRUCTURE OF CHLOROPRENE RUBBERS -U-

AUTHOR-(03)-ASLANYAN, K.A., BAGDASARVAN, R.V., KAFADAROVA, E.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 434-7

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--POLYCHLOROPRENE, UV RADIATION, EMULSION POLYMERIZATION, POLYMER CROSSLINKING, RUBBER, MATERIAL DEGRADATION, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0247   STEP NO--UR/0459/70/012/002/0434/0437

CIRC ACCESSION NO--AP0106903
                          UNCLASSIFIED

2/2   044

CIRC ACCESSION NO--AP0106903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYCHLOROPRENE (I) RUBBERS PREPD.
BY EMULSION POLYMN. IN THE PRESENCE OF K $SUB2$ S $SUB2$ O $SUB8$, TERT
DODECYL MERCAPTAN, AND NA ALKYLSULFONATE, WERE AGED BY UV IRRADN. THE
IRRADN. CAUSES CROSSLINKING, WHICH PROCEEDS THROUGHOUT THE I VOL. AND IS
MORE EXTENSIVE FOR HIGHER MOL. WT. I, AND DEGRADATION, WHICH IS
ESSENTIALLY A SURFACE PHENOMENON. THE CROSSLINKING DECREASES THE
CRYSTALLINITY; BOTH PROCESSES CHANGE THE POLYDISPERSITY, SOLY., AND
OPTICAL PROPERTIES OF I.

1/2   040   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--CHANGES IN POLYCHLOROPRENE CRYSTALLIZATION UNDER THE INFLUENCE OF
   UV IRRADIATION STUDIED BY IR SPECTROSCOPY -U-
AUTHOR-(03)-ASLANYAN, K.A., BAGDASARYAN, R.V., KAFADAROVA, E.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK ARM. SSR, FIZ. 1970, 5(1), 60-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYCHLOROPRENE, CRYSTALLIZATION, UV RADIATION, RADIATION
   EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0967   STEP NO--UR/0431/70/005/001/0060/0066

CIRC ACCESSION NO--AP0136397
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0136397
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRYST. POLYCHLOROPRENE (I)
CONTAINS FLAT POLYMER CHAINS IN WHICH THE MONOMER UNITS HAVE TRANS
CONFIGURATIONS. SUCH CONFIGURATIONS GIVE IR BANDS AT 1450 CM PRIME
NEGATIVE1. THE IRRADN. OF I SAMPLES WITH UV LIGHT DECREASES THE IR BAND
INTENSITY OF I AT 1450 CM PRIME NEGATIVE1 AND CAUSES OTHER SPECTRUM
CHANGES. THE DECREASE OF I ORIENTATION DUE TO UV IRRADN. IS CAUSED BY
CROSSLINKING. STABILIZERS, SUCH AS P 23 OR 2246, SCREEN OUT THE
RADIATION BY ABSORBING THE UV LIGHT ENERGY AND DISTRIBUTE IT AMONG THE
AROMATIC RINGS.

UNCLASSIFIED

1/2   047   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--MOLECULAR MECHANISMS OF THE EFFECT OF UV IRRADIATION ON THE
   STRUCTURE OF POLYCHLOROPRENE -U-
AUTHOR-(03)-ASLANYAN, K.A., BAGDASARYAN, R.V., KAFADAROVA, E.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK ARM. SSR, FIZ. 1970, 5(1), 67-73.

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--UV RADIATION, POLYMER CROSSLINKING, CONJUGATE BOND SYSTEM,
   POLYCHLOROPRENE, OXIDATIVE DEGRADATION, MOLECULAR STRUCTURE, RADIATION
   EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0969   STEP NO--UR/0431/70/005/001/0067/0073

CIRC ACCESSION NO--AP0136399

CIRC ACCESSION NO--AP0136399
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. UV IRRADN. OF POLYCHLOROPRENE (I)
   IN THE PRESENCE OF O BROUGHT ABOUT RANDOM OXIDATIVE DEGRADATION AND
   CROSSLINKING. ADDN. OF P 23(2,4,6, TRI,TERT,BUTYLPHENOL) IMPROVED THE
   RADIATIVE STABILITY OF I, PRESUMABLY DUE TO A CONJUGATED PI ELECTRON
   RING SYSTEM WHICH DISSIPATED THE ENERGY ABSORBED BY THE POLYMERS.

USSR   UDC: 911.3.616.981.42(47+57)

ASLANYAN, R. G., KAYTMAZOVA, D. S., KURDINA, D. S., ZABRODIN, V. A.

"Natural Foci of Brucellosis"

V sb. Materialy SV Vses. S'ezda epidemiologov, Mikrobiologov i infeksionistov. Tezisy dokl. Ch. I. (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Diseases, Report Theses Part I—collection of works) Moscow, 1970, pp 112-113 (from RZh-Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.113, by V. Maslovskaya)

Translation: Brucellosis infection has been observed in the last few years among wild animals of the USSR Far North. Instudying 1,437 wild animals and fur-gearing animals from farms (wild reindeer, polar wolf, polar fox, wolverine, muskrat, sable and others), 32 brucellosis cultures were isolated. They were all identical to cultures isolated from domesticated reindeer, i. e. of the biotype Brucella suis. The high incidence of brucellosis in the polar wolf (9.2%) furnishes indirect proof of the significant distribution of this infection among reindeer. Thus the presence of brucellosis infection among wild animals and murine rodents acquires great epizootiological and epidemiological significance, considering the constant contact of wild reindeer with domesticated deer, and their commercial significance.
1/1

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1/2   010   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--CONCURRENT NOSOAREAL OF BRUCELLOSIS, REPORT II, DISTRIBUTION OF
   BRUCELLOSIS IN THE COUNTRIES OF AFRICA, ASIA AND OCEANIA -U-
AUTHOR-(02)-ASLANYAN, R.G., CHELYADINOVA, YE.B.

COUNTRY OF INFO--ASIA, AFRICA, IRAN

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
   PP 72-77
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRUCELLOSIS, DISEASE INCIDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0093   STEP NO--UR/0016/70/000/005/0072/0077

CIRC ACCESSION NO--AP0114489
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0114489
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAJORITY OF THE COUNTRIES OF
AFRICA, ASIA AND OCEANIA ARE AGRICULTURAL COUNTRIES WITH A SUFFICIENTLY
HIGH LEVEL OF CATTLE BREEDING. CONDITIONS OF LIVING OF THE POPULATION,
FORMS OF CATTLE REARING AND CERTAIN NATIONAL FOOD STUFFS AND HABITS OF
THE POPULATION PROMOTE THE SPREAD OF BRUCELLA INFECTION AMONG THE
POPULATION. A TOTAL OF 1,375 CASES OF BRUCELLOSIS WERE RECORDED IN
1961, 66 IN 18 COUNTRIES OF AFRICA. MOST OF THE CASES OCCURRED IN
TANSANIA (476), KENYA (432) AND SUDAN (97). WITHIN THE SAME PERIOD
15,675 CASES OF INFECTION WERE RECORDED IN THE COUNTRIES OF ASIA AND
OCEANIA. 90PERCENT OF ALL CASES OF BRUCELLOSIS ON THE CONTINENT FELL ON
IRAN. IN THE COUNTRIES OF OCEANIA 96.2PERCENT OF THE CASES WERE
REGISTERED IN AUSTRALIA AND NEW ZEALAND.   FACILITY: INSTITUT
EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI, MOSCOW.

UNCLASSIFIED

CIRC ACCESSION NO--AP0130951
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE PERIOD FROM 1961 TO
1966 A TOTAL OF 21,033 CASES OF HUMAN BRUCELLOSIS WERE REGISTERED ON THE
AMERICAN CONTINENT (19PERCENT OF THE CASES OF INFECTION REPORTED BY
WHO). THE GREATEST BRUCELLOSIS INCIDENCE DURING THAT PERIOD WAS SEEN
(AS BEFORE) IN ARGENTINE, MEXICO, PERU AND THE USA (95PERCENT OF ALL
CASES REGISTERED ON THE CONTINENT).   FACILITY: INSTITUT
EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI, MOSKVA.

ASLANYAN, R. R., TUL'SKIY, S. V., POZHARITSKAYA, L. M., and LAPTEVA, Ye. A.,
Institute of Microbiology, Academy of Sciences USSR, and Chair of Biophysics,
Physics Faculty, Moscow State University imeni M. V. Lomonosov

"Inhibition of Germination of Actinomycete Spores in a Constant Magnetic Field"

Abstract: Actinomycete spores were exposed to a constant magnetic field of
10,000 oersted, generated by a DC-powered electromagnet with an interpole
distance of 25-30 mm. Thermoact. vulgaris 136 spores prepared as a suspension
in a nutrient medium (opt. dens. 0.2) on glass slides were exposed to the
magnetic field for 1.5 hr at 55°C, while those prepared as an aqueous sus-
pension (opt. dens. 0.2) in test tubes were kept in the magnetic field for the
same period but at room temperature. Act. streptomycini spores similarly pre-
pared on slides were exposed for 5.5 hr at 28°C and those in test tubes for 1.5
hr at room temperature. Thirty minutes after completion of exposure, the
spores were planted on a suitable medium and allowed to germinate for 1.5 hr
at 55 and 28°C. On the whole, the number of germinating spores in the experi-
mental samples was 6% lower than in control samples. Among Thermoact. vulgaris,
the proportion of germinating spores was 46.5% in experimental vs. 55% in
1/2

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USSR

ASLANYAN, R. R., et al., Mikrobiologiya, Vol 42, No 3, 1973, pp 556-558

control slides and 69% in experimental vs. 72% in control tubes. Among Act. streptomycini, the corresponding figures were 47% vs. 54.5% and 44% vs. 49%. Though the mechanism of action remains to be elucidated, it is concluded that a constant magnetic field inhibits germination, possibly by preventing a reduction in the native paramagnetism of the spores.

2/2

ASLANYAN, R. R., AGRE, N. S., KALAKUTSKIY, L. V., and KIRILLOVA, I. P.,
Institute of Microbiology, Academy of Sciences USSR

"Thermostability of Actinomycetes Spores in Water, Air, and Hydrocarbons"

Abstract: The thermostability of Thermoactinomyces vulgaris 136, Actinomyces
streptomycini B-6, and Actinomyces thermovulgaris 1915 spores in air was
fairly high (120 to 130°C) regardless of the type of spore or the thermo-
philic nature of the microorganism. The medium in which the spores were
heated markedly affected their thermostability. A. streptomycini B-6 spores
tolerated a temperature of only 50°C in water, but remained viable in air even
when heated to 120°C. A. thermovulgaris 1915 and T. vulgaris 136 spores
were heat resistant in all media tested - water, air, mineral oil, and undecane.
A high content of intracellular moisture tended to lower thermostability
in A. streptomycini B-6 spores. Heating in undecane (but not in octane,
pentadecane, or mineral oil) sharply reduced the maximum temperature tolerated
by T. vulgaris 136 spores. The thermostability of these spores was higher
in water than in air; the content of intracellular moisture had little
influence in this respect.
1/1

- 13 -

1/2   034   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--THEORY OF THE FARADAY EFFECT OF DIAMAGNETIC MOLECULES -U-

AUTHOR-(02)-ASLANYAN, V.M., MINASYAN, D.M.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 375-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FARADAY EFFECT, DIAMAGNETISM, MOLECULE, QUANTUM MECHANICS,
MAGNETOOPTIC EFFECT, ELECTRIC DIPOLE MOMENT, UV SPECTRUM, MAGNETIC
PROPERTY, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1780   STEP NO--UR/0051/70/028/002/0375/0377

CIRC ACCESSION NO--AP0112766
                              UNCLASSIFIED

2/2   034   UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112766

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHENOMENOLOGICAL THEORY OF
FARADAY EFFECT, WHICH IS CLASSICAL ANALOG OF QUANTUM MECH. THEORY BY
GROENWEGE, IS GIVEN. THE PHYS. MEANING OF MAGNETOOPTICAL PARAMETERS ETA
AND EPSILON WHICH APPEARED IN QUANTUM MECH. THEORY WAS DISCUSSED. THE
PARAMETER ETA CHARACTERIZED THE CHANGE OF OPTICAL POLARIZABILITY IN
MAGNETIC FIELD, I.E. DETD. MAGNETOOPTICAL EFFECT CORRESPONDING TO ELEC.
DIPOLE RADIATION.   THIS EFFECT OCCURRED MAINLY IN THE UV REGION OF THE
SPECTRUM.   THE PARAMETER EPSILON CHARACTERIZED CHANGE OF MAGNETIC
SUSCEPTIBILITY IN MAGNETIC FIELD, I.E. DETD. MAGNETOOPTICAL EFFECT IN
MAGNETIC DIPOLE APPROACH, AND OCCURRED IN THE MICROWAVE SPECTRAL REGION.
   THE RATIO OF THESE PARAMETERS WAS PRACTICALLY EQUAL TO THAT OF
CORRESPONDING INTENSITIES OF RADIATION, I.E. ETA-EPSILON EQUALS I SUB1-I
SUB2 APPROXIMATELY EQUAL TO 10 PRIME4, WHERE I SUB1 AND I SUB2 ARE
INTENSITIES OF ELEC. AND MAGNETIC RADIATIONS, RESP.

UNCLASSIFIED

USSR   UDC 533.9.01

ASMARYAN, E. A., and KLIMONTOVICH, YU. L.

"On the Theory of Spectral Line Broadening by Electrons in a Nonequilibrium Plasma"

Abstract: In a previous article the authors calculated the spectral emission line width of atoms in a partially ionized plasma resulting from the interaction of the radiating atom with electrons that are subject to a nonequilibrium pulse distribution, with only the resonant transition $n \to m$ being taken into account. The present article considers the same problem and calculates the line width of the transition $n \to m$ with allowance for every possible transition from the levels n and m. The line width is now determined by the spectral function of fluctuations of the electric field $(\delta E \delta E)_\omega$ not only on the resonant frequency ω_{nm} but also on all frequencies of possible transitions from the levels n and m.

1/1

Luminescence

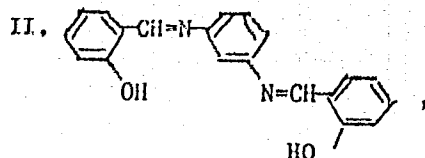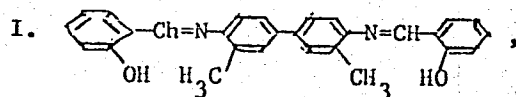KIYAZHANSKIY, M. I., ASMAYEV, O. T., OSIPOV, O. A., KRASOVITSKIY, B. M.

"Luminescence and Photochemistry of Azomethyne Compounds. VII. Multinuclear Mono and Bis-azomethynes in the Crystal State"
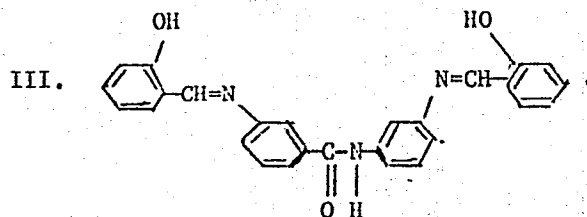
Abstract: In order to discover the effect of the length of the chain of con-jugate bonds on the thermophotochromy of azomethynes, a study was made of some multinuclear mono and bis-azomethynes in the crystal state studied in detail in solutions previously [B. M. Krasovitskiy, et al., Zh. fiz. khimii, 45, 1467, 1971; O. T. Asmayev, et al., Zh. fiz. khimii, in printing]. The following compounds were selected for more detailed study:

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USSR

KIYAZHANSKIY, M. I., et al., Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 178-180

III.

        The investigated multinuclear mono and bis-azomethynes in the crystal state reveal both photochromy and thermochromy. In contrast to the derivatives of salicylalaniline, the indicated compounds are luminescent, and the thermochromy and photochromy do not mutually exclude each other. Absorption spectra are presented. An explanation for the experimental data is offered by which on excitation in the benzoid form, phototransfer of a proton takes place with the formation of the quinoid form and subsequent emission either in the trans and cis-quinoid or only in the cis-quinoid. The latter is a specific characteristic of the crystalline state.

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1/2   018   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--IMIDAZO(4,5 F) QUINOLINE. II. UV ABSORPTION AND LUMINESCENCE OF
  IMIDAZO(4,5 F) QUINOLINE AND ITS QUATERNARY SALTS -U-
AUTHOR-(05)-KHRISTICH, B.I., KNYAZHANSKIY, M.I., OSIPOV, O.A., ASMAYEV,
  O.T., SIMONOV, A.M.
COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 234-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, ABSORPTION SPECTRUM, LUMINESCENCE, IMIDAZOLE,
  QUINOLINE, QUATERNARY SALT, ACTIVIATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1109   STEP NO--UR/0409/70/000/002/0234/0237

CIRC ACCESSION NO--AP0104507
-------------------------------UNCLASSIFIED------------------------------

CIRC ACCESSION NO--AP0104507
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UV ABSORPTION SPECTRUM OF THE
TITLE COMPD. IS VERY SIMILAR TO THAT OF NAPHTHO(1,2-D)IMIDAZOLE AND
INDICATES THAT PROTONATION OCCURS ON THE QUINOLINE N ATOM.   LUMINESCENCE
SPECTRA WAS STUDIED IN THE 17,000-24,000 CM PRIME NEGATIVE1 REGION AND A
MAX. WAS FOUND AT 458-96 NM. A POLAR MEDIUM FACILITATES THE TRANSITION
OF THE EXCITED MOLS. IN THE POLAR FORM WITH HIGHER PROTON ACCEPTOR
PROPERTIES. THE EXCITATION ENERGY FOR THE IMIDAZO-QUINOLINIUM SALT IS
REDUCED DUE TO THE POSITIVELY CHARGED N ATOM WHICH SHIFTS THE ELECTRON
CHARGE IN THE SAME SENSE AS THE ABSORPTION OF A PHOTON DOES. THE
IRRADN. OF THE QUATERNARY SALT DOES NOT INVOLVE ENERGY ABSORPTION
CONNECTED WITH THE CHANGE OF N HETEROATOM HYBRIDIZATION.

UNCLASSIFIED

The difference of the spectral densities is computed at zero frequency for cases of symmetrical and asymmetrical energy spectra in identical noise bands. Ye. L.

1/1

USSR   UDC: 621.372.061

ASNIN, L. B.

"Synthesis of an Optimal AM Detector by a Noise Carrier"

V sb. Radioelektron. v nar. kh-ve SSSR. Ch 2 (Radioelectronics in the National Economy of the USSR, Part 2) Kuybyshev, 1970, pp 321-325 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A129)

Translation: The design of an operator providing an AM detector with a noise carrier in the form of a combined nonlinear element and filter with a pulse transfer characteristic for minimum mean-square error is considered. One illustration. N. S.

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USSR

ASNIN, V. M., LOMASOV, YU. N., and ROGACHEV, A. A., Physicotechnical Insti-
tute imeni A. F. Ioffe, Leningrad

"Formation Energy of Biexcitons in Silicon"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

Abstract: In a kinetic study of biexciton formation J. D. CUTHBERT found that
$E_b = 0.6 \cdot 10^{-3}$ ev. Such a low binding energy value, however, is in conflict
with the fact of the experimental observation of exciton molecules in silicon
at $T = 4.2°$ K and exciton concentrations of $10^{12} \div 10^{14}$ cm^{-3}. Actually, the
maximum possible number of biexcitons that can be attained under thermal
equilibrium between excitons and biexcitons is determined by the mass-action
law

$$n_b = n_{ex}^2 \frac{N_b}{N_{ex}^2} e^{-E_b/kT}. \qquad (1)$$

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USSR

ASNIN, V. M., et al., Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

where N_{ex} and N_b are the effective densities of states for excitons and biexcitons. The relation between exciton and biexciton concentrations is determined by the equation

$$\frac{dn_b}{dt} = \sigma v n_{ex}^2 - \frac{n_b}{\tau_b} - c v \frac{N_{ex}^2}{N_b} n_b e^{-E_b/kT}. \qquad (2)$$

where σ is the cross section for the formation of a biexciton from two free excitons, v is the thermal exciton velocity, τ_b the biexciton lifetime. For excitation conditions close to stationary, it follows from (2) that

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USSR

ASNIN, V. M., et al., Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

$$n_b = \frac{cvn_{ex}^2}{\frac{1}{\tau_b} + v\frac{N_{ex}^2}{N_b}e^{-E_b/kT}} \qquad (3)$$

A flash lamp was used to excite luminescence, and n- and p-type silicon was used for the measurements. The biexciton binding energy E_b was found to be equal to $5.5 \cdot 10^{-3}$ ev. The variation of n_{ex}^2/n_b with temperature is very slight. The formation cross section for an exciton molecule is close to 10^{-14} cm^2.

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USSR

ASNIN, V. M., ZUBOV, B. V., MURINA, T. M., PROKHOROV, A. M., ROGACHEV, A. A.,
and SABLINA, N. I., Physics Institute imeni P. N. Lebedev, Academy of Sciences
USSR

"Radiative Recombination of Biexcitons in Germanium"

Abstract: The article describes results of a study undertaken to obtain ad-
ditional data on the nature of the long-wave recombination radiation line
in germanium, as well as to determine the binding energy of biexcitons. Some
preliminary findings were published in previous articles by the authors. Ex-
periments were performed on samples of pure n- and p-type germanium with a
total impurity center concentration on the order of $5 \cdot 10^{12}$ cm^{-3}. Two methods
of excitation were used, viz., surface and volume. Data were obtained at T =
$4.2°$ K in a wide range of excitation level variations showing the dependence
of the intensity of an exciton line with a quantum energy $h\nu = 0.713$ ev on
the intensity of a biexciton line with $h\nu = 0.708$ ev. A quadratic

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dependence is observed up to concentrations $n_b \approx 3 \cdot 10^{14}$ cm^{-3}, while at higher excitation levels there is a linear dependence, which can be explained by the effect of nonequilibrium phonons produced when the excitons are bound into biexcitons. The energies E_b (dissociation energy of an exciton molecule) and ΔE ("recoil" energy whicha biexciton receives during phonon emission) were found to be 3.6-3.8 Mev and 2.0-2.2 Mev respectively. The energy of the phonon produced during formation of the biexciton is 1.6 Mev. The experimental results prove the biexciton nature of the 0.708 ev line in germanium. Regarding the shape of this line and its energy position, it is suggested that there is a recombination process in which annihilation of one exciton is accompanied by acceleration of another as a whole.

The authors thank L. V. KELDYSH and S. M. RYVKIN for a useful discussion of a number of questions touched upon in the article.

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USSR

ASNIN, V. M. and ROGACHEV, A. A. (Physical-Technical Institute imeni A. F. Ioffe, Academy of Sciences USSR)

"The Dielectric-Metal Transition in an Exciton System in Germanium"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 14, No 9, 5 Nov 71, pp 494-495

Abstract: An experimental study was carried out on the nature of a small region in which conductivity is independent of temperature and on exciton (electron-hole pair) concentrations in germanium. This region appears immediately following the transition into the metallic state and is observed only in relatively impure samples. Samples having less than 2. X $10^{12}cm^{-3}$ impurity did not exhibit this effect. Metallic conductivity appears in relatively pure samples (impurity concentrations of 1 to 2 X $10^{-16}cm^{-3}$), followed by conductivity characteristic of degenerate electrons and holes. Conductivity in pure samples is plotted as a function of electron-hole pair 1/2

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ASNIN, V. M. et al, Pis'ma v Zhurnal Eksperimental'noy i Teore-
ticheskoy Fiziki, Vol 14, No 9, 5 Nov 71, pp 494-495

concentration at 4.2 and 2.5°K. Conductivity is unstable near
the metallic transition point even when the excitation light
pulses were held within 1%. It is concluded that the metal-
dielectric transition at helium temperatures is a first-
order phase transition.

Orig. art. has 1 fig. and 5 refs.

2/2

Crystals & Semiconductors

USSR

ASNIN, V. M., ROGACHEV, A. A. and SABLINA, N. I., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences USSR

"Giant Photocurrent Fluctuations in Germanium"

Abstract: An experimental study of photocurrent fluctuations in a germanium $p = i = n$ diode was conducted under conditions in which an exciton condensate should exist. The idea was that droplets of exciton concentrate, if they exist, will be attracted by the inhomogeneous electric field to the pn-junction and will yield a current pulse upon being destroyed in the junction. By measuring the charge occurring during this pulse, one can determine the number of excitons in a droplet and hence the dimensions of the droplets by using data on the density of the condensate. Measurements conducted at $T \leq 4.2°K$ showed that after the creation of excitons with a concentration greater than $2-3 \cdot 10^{15}$ cm^{-3} in a region fairly close to the pn-junction, the shape of the current pulse flowing through the pn-junction became irregular. Two types of fluctuations were observed: long fluctuations several microseconds in length and short fluctuations about 0.1 usec in length. The amplitude of these fluctuations at maximum excitation levels of $\sim 5 \cdot 10^{15}$ cm^{-3} reached values of the order of several

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milliampere meters, corresponding to a charge of $10^{-8}-10^{-10}$ coul. passing through the pn-junction. Fluctuations of this magnitude are explained by entry of droplets of exciton concentrate into the pn-junction field. The magnitude and length of the fluctuations quickly dropped as the excitation level or the distance of the excitation region from the pn junction decreased. This is attributed to the rapid decrease in the size of the droplets entering the region of the pn junction. It is concluded that the results verify the hypothesis that a condensate arises in germanium under conditions in which the density of the exciton gas is sufficiently close to the density of particles in the liquid phase and that the heat of sublimation is close to 1 Mev.

2/2

UNCLASSIFIED   PROCESSING DATE--03JUL70

TITLE--GIANT FLUCTUATIONS OF A PHOTOCURRENT IN GERMANIUM -U-

AUTHOR--ASNIN, V.M., ROGACHEV, A.A., SABLINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(3), 162-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, PN JUNCTION, PHOTOELECTRIC EFFECT, ELECTRIC CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1066   STEP NO--UR/0386/70/011/003/0162/0165

CIRC ACCESSION NO--AP0047507
                    UNCLASSIFIED

105120d   Giant fluctuations of a photocurrent in germanium.
Asnin, V. M.; Rogachev, A. A.; Sablina, N. I. (Fiz.-Tekh. Inst.
im. Ioffe, Leningrad, USSR).   Pis'ma Zh. Eksp. Teor. Fiz. 1970,
11(3), 162-5 (Russ).   A 1 sq. cm p-i-n diode was connected to
the 10-mm side of a $10 \times 40 \times 1$ mm Ge plate.   Photocurrent
signals due to the appearance of free current carriers at the p-n
junction were recorded.   At $\leq 4.2°K$ excitons with a concn. of
$(2-3) \times 10^{15}/cm^3$ gave an irregular pulsed current.   The fluctu-
ations varied from several μsec to 0.1 μsec and the amplitude was
of the order of several mA, which corresponded to a change of
10^{-8}-10^{-10} Coulomb passing through the p-n junction.   The re-
sults confirmed previous conclusions [Asnin, et al. (1969)] that a
condensate in Ge occurs when the d. of the exciton gas had a d.
close to the d. of particles in the liq. phase and that the heat of
sublimation is close to 1 mev.   The fluctuations were attributed
to the entrance of "drops" of the exciton condensate into the p-n
junction field.   GBJR

1/2   028   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--GIANT FLUCTUATIONS OF PHOTOCURRENT IN GERMANIUM -U-

AUTHOR-(03)-ROGACHEV, A.A., SABLINA, N.I., ASNIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--JETP LETERS (USA), VOL. 11, NO. 3, P. 162-5 (FEB. 1970)

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM DIODE, PHOTO EMF, CURRENT DENSITY, EXCITON, HEAT OF
   SUBLIMATION, CARRIER DENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1783   STEP NO--US/0000/70/011/003/0162/0165

CIRC ACCESSION NO--AP0133688
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRESENTS SOME RESULTS OF AN EXPERIMENTAL STUDY OF PHOTOCURRENT FLUCTUATIONS IN A GERMANIUM P-I-N DIODE UNDER CONDITIONS WHEN THE EXISTENCE OF AN EXCITION CONDENSATE IS EXPECTED. IT IS SHOWN THAT THESE CONDITIONS EXIST WHEN THE DENSITY OF THE EXCITON GAS IS CLOSE ENOUGH TO THE DENSITY OF THE PARTICLES IN THE LIQUID PHASE, AND THAT THE HEAT OF SUBLIMATION IS CLOSE TO 1 MEV. (10 REFS.).   FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

UNCLASSIFIED
TITLE--BIEXCITONS IN GERMANIUM -U-   PROCESSING DATE--30OCT70

AUTHOR-(03)-ASNIN, V.M., ROGACHEV, A.A., SABLINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 803-11

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--GERMANIUM, METAL SINGLE CRYSTAL, PHONON, EXCITON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0929
                              STEP NO--UR/0449/70/004/004/0808/0811
CIRC ACCESSION NO--AP0121531
                    UNCLASSIFIED

UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE KINETICS OF ESTABLISHING AN
EQUIL. BETWEEN EXCITONS AND BIEXCITONS IN PURE GE SINGLE CRYSTALS WAS
STUDIED EXPTL. NONEQUIL. CARRIERS WERE GENERATED BY LIGHT PULSES WITH
DURATION OF 1.5 MUSEC; THE CARRIER LIFETIME WITH RESPECT TO INTERBAND
RECOMBINATION WAS 20-60 MUSEC. THE CARRIER CONCN. WAS CONTROLLED BY
CHANGING EITHER THE INTENSITY OF GENERATION OR THE DELAY BETWEEN THE
PULSE AND THE MOMENT OF MEASURING THE RECOMBINATION RADIATION. IN THE
WHOLE CONCN. REGION, THE RELATION N SUBB SIMILAR TO N SUBEX PRIME2 WAS
ESTABLISHED, WHERE N SUBB AND N SUBEX STAND FOR BIEXCITON AND EXCITON
CONCNS., RESP. WITH INCREASING PULSE MEASUREMENT DELAY, THE INTENSITY
OF THE 0.713-EV EXCITON LINE INCREASES, BUT THAT OF THE 0.709-EV
BIEXCITON LINE REMAINS UNALTERED. THE RESULTS ARE EXPLAINED BY ASSUMING
THAT NONEQUIL. PHONONS GENERATED TOGETHER WITH BIEXCITONS SHIFT THE
EQUIL., AND THE GENERATION OF FREE EXCITONS IS PREFERRED.
FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR   UDC 621.791.756.011

ASNIS, A. YE., KASATKIN, B. S., IVASHCHENKO, G. A., and MUSIYACHENKO, V.F.,
Institute of Electric Welding imeni Ye. O. Paton

"Increasing Strength of Weld Joints Operating at Low Temperature"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 33-34

Abstract: One of the measures for increasing workability of weld joints at
low temperature is the removal of stress concentrators. These stresses are
most significant at points where the seam merges with the base metal. A smooth
transition can be obtained using an electric arc furnace with a nonconsumable
electrode. At the Institute of Electric Welding work was performed to explain
the effect of electric-arc processing on the resistance of weld joints to
brittle failure at low temperature. Tests were conducted using steel 14KhMND-R
where welded samples were subjected to a 300-ton force at -60°C. Seams in
the initial state fractured along the weld seam; seams which had been
mechanically cleaned failed in the seam itself; and seams which had been
electric-arc treated failed in the base metal at some distance from the weld.
Weld joints made in steels 09G2S and 10G2B which had been tempered at 650 and
550°C possessed a higher impact strength than those seams which had not been
heat treated. Thus it was concluded that local electric-arc treatment is an
effective method of increasing the workability of joints at low temperature.
2 figures, 3 tables.
1/1

Welding

USSR   UDC 621.791.75:004.17

ASNIS, A. YE., IVASHCHENKO, G. A., Institute of Electric Welding
imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR, and
MOSENKIS, YU. G., Leninskaya Kuznitsa Plant

"Properties of Welded Joints With High-Strength Welds"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 15-17

Abstract: The properties of low-carbon steel welded joints with
high-strength welds were studied under the condition of retain-
ing sufficient weld plasticity. It is shown that under this con-
dition, high-strength welds do not differ from joints with ordi-
nary welds. Micromechanical test data show the variation of
mechanical properties of the joint in the weld and the weld-
affected zone during welding by UONI-13/45 electrodes, Sv-08G2S
wire in carbon dioxide, ANP-1 (ANV-70) electrodes, and Sv-08KhGSMF
wire in carbon dioxide. For comparison of the deformability of
welded joints with ordinary and high-strength welds, samples were
manufactured with a two-way bead forming in a groove (type 1) and
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USSR

ASNIS, A. YE., et al., Avtomaticheskaya Svarka, No 3, Mar 71, pp 15-17

butt joints with complete penetration (the weld of ordinary strength) and with poor penetration to 40 percent of the cross section of the specimen (high-strength weld) from which type 2 specimens were made. A true stress diagram is presented for the type 2 samples samples using various electrodes and wire. It is noted that tensometric measurements of the stresses in the welded joint under tension demonstrated that in the initial stage of plastic flow the stress growth rate in the basic metal, the weld-affected zone, and the weld is different. As a result of low plasticity of welds made by chalk-coated electrodes, cracks occurred in the welds with insignificant strain. In high-strength welds made by ANP-1 electrodes and Sv-08KhGSMF wire no cracks occurred during this stage.

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USSR   UDC 621.791:338.45

MOSENKIS, Yu. G., "Lenin Forge" Plant, ASNIS, A. YE., and KHARCHENKO, P. F.,
Institute of Electric Welding imeni YE. O. Paton, Academy of Sciences UkrSSR

"Efficiency of Using New Welding Materials for Corner Joints With Reduced Cross
Section"

Abstract: A study was made of the economy of welded constructions with reduced
amounts of weld metal. In square Tee-joints, in the absence of bevelled edges,
the amount of weld metal can be reduced by reducing the fillet weld size. This
can be done by using electrode materials of higher strength, which would ensure
adequate plasticity of the weld. A table shows the economy of reducing fillet
weld size in manual and semi-automatic welding in CO_2, using UONI-13/45 and
ANP-1 electrodes and Sv-08G2S and Sv-08KhGSMF wires. A figure shows the tech-
nological cost of 1 km of square Tee-joint by semi-automatic welding in CO_2,
depending on fillet size.

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Precision Mechanical and Optical

Adrianova, I. I., Candidate of Technical Sciences, Aspis, L. N., Vereshchaka, A. I., Nesterova, Z. V., Candidate of Technical Sciences, and Popov, Yu. V., Candidate of Technical Sciences

"Frequency Conversion with Dual Modulation of Light in Light Rangefinders"

Abstract: Nonlinear distortions are studied with dual modulation by polarization, resulting from operating modes of light modulators. It is shown that with the maximum signal at the intermediate frequency, the nonlinear distortions amount to 27%. It is found to be possible to decrease nonlinear distortions by selecting the operating mode of the light modulator and converter. In contrast to the method of the phase detector, in the light modulator studied, the method of conversion of frequency in the modulator is free of errors related to changing position of the plane of polarization of radiation as it propagates from the modulator to the converter. Thus, when the converter is missmatched with the modulator by $\pm 15°$, equivalent to rotating the plane of polarization of the radiation by the same angle, the phase error does not exceed the error of the measuring device ($\pm 1°$). The results produced can be used to select the operating mode

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USSR

Adrianova, I. I., Asnis, L. N., Vereshchaka, A. I., Nesterova, Z. V., and
Popov, Yu. V., Optiko-Mekhanicheskaya Promyshlennost', No 5, 1972, pp 8-11.

of an optical radiation modulator and converter in a light rangefinder with
frequency conversion and dual light modulation.

2/2

USSR

UDC 535.241.13.535.511

ASNIS, L. N., and VERESHCHAKA, A. I.

"Experimental Investigacion of Phase Characteristics of Galliun Arsenide Crystal Modulator"

Leningrad, Optiko-mekhanicheskaya promyshlennost' No 11, Nov 71, pp 13-14

Abstract: The modulation phase distribution across the beam, along and normal to a field applied to the modulator, was experimentally investigated. Three-path and five-path electrooptical gallium arsenide crystal (GaAs) modulators were studied. Bloc diagrams of the experimental setup and techniques are presented. A commerical OKG-15 laser of 10.6 mkm emission wave length and 1 w output power in single mode regime was used as emission source. Variations of the emission intensity up to a photo receiver five meters away, and of the modulation phase with the coordinate of the modulated beam cross section are presented in graphs. Their analysis shows, that insignificant phase errors in gallium arsenide crystal modulator made it possible to use it in accurate phase light-detection apparatus, that errors of the three- and five-path modulator are practically the same, and that modulation phase variation across the beam may be explained by the electrical field irregularity across the crystal, due to the inhomogeneity of the crystal.
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USSR   UDC 621.791.856.2.03

GUREVICH, S. M., NERODENKO, M. M., POVOD, A. G., TETERVAK, A. F.,
ASNIS, YE. A., Institute of Electric Welding imeni Ye. O. Paton,
Academy of Sciences UkrSSR, GRISHIN, V. K., FERTIKOV, V. G.,
ESTRIN, V. N., LEVKOVICH, R. M., Moscow

"Equipment for Welding Chemically-Active Refractory Metals in a
Controlled High Purity Helium Atmosphere"

Abstract: A description is given of equipment for manual and
automatic electric welding of refractory metals in a controlled
atmosphere of high-purity helium. The equipment, which was
developed at the Institute of Electric Welding imeni Ye. O. Paton,
ensures continuous control of oxygen, nitrogen, and water vapor
impurities and helium regneration. It consists of a welding
chamber with a vacuum system; 2) equipment for helium purification
and 3) a helium purity control system. A photograph and schematic
diagram of the installation are presented. The welding chamber
(700 mm in diameter, volume, approximately 1000 l) is made of
1/2

USSR

GUREVICH, S. M., et al., Avtomaticheskaya Svarka, No 8, Aug
70, pp 45-47

1Khl8N9T steel. It is provided with a VN-1 suction pump, making
it possible to obtain a 2×10^{-5} torr vacuum in the chamber with
full load. A sorption method using activated carbon and zeolite
at liquid nitrogen temperature at an absorber pressure of
150 atm is used for helium purification. A KhG-type gas chroma-
tograph is used for helium purity control.

USSR

UDC 621.791.011:669.293

GUREVICH, S. M., NERODENKO, M. M., ASNIS, YE. A., and SMIRNOV, S. V.

"Durability of Niobium Welds under Varying Loads"

Kiev, Avtomaticheskaya Svarka, No 6, 1970, pp 72-73

Abstract: This short article presents the results of tests on the fatigue of niobium and its alloys performed by the Electric Welding Institute imeni Ye. O. Paton. Such tests are important because niobium is a prominent factor in the alloying of refractory metals. The tests were performed to compare welded compounds and the basic metal, and used niobium films 2 mm thick which had not undergone thermal processing, as well as annealed niobium tubes 28 mm in diameter with a wall thickness of 1 mm. The welding was done in a chamber with a controlled atmosphere of type-A argon. A table showing the mechanical characteristics of the metal and the welding is given. The tubes were tested for fatigue in bending in a special adaptation of the Afanas'yev method, all tests being conducted on the basis of $2 \cdot 10^6$ cycles. A photograph showing a niobium film which has undergone the tests is reproduced.

1/1

USSR

UDC   621.3/6.6.002.72(088.8)

ASOCKOV, A. D., TSAREV, R. M.

"An Electronic Module"

USSR Author's Certificate No 258408, Filed 22 Jul 68, Published 14 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 19V302 P)

Translation: An electronic module is proposed which is equipped with a base, which is made in the form of two parallel dielectric circuit boards with openings for the leads of radio components which are mounted between these boards and perpendicular to them. As a distinguishing feature of the device, radio components can be replaced without disassembling the module by making every other opening in the boards with a diameter equal to that of the component whose lead passes through this opening, and supplying this opening with a cap of conical shape with a hole for the component lead.

1/1

USSR

UDC: 621.438.001.5:621.43.056

ASOSKOV, V. A., Candidate of Technical Sciences, CHERNIN, Kh. N., SUZDAL'TSEVA, N. F., Engineers

"Some Characteristics of the Operation of the Combustion Chamber in the Type GTN-9-750 Gas Turbine Produced by the Leningrad Metals Plant"

Abstract: One prototype and nine series-produced 9 Mw type GTN-9-750 turbines were produced at the Leningrad Metals Plant in 1964-1965, and are now in use at two compressor stations of the Bukhara-Ural Gas Pipeline. This article presents a few characteristics, as well as cross-sectional diagrams and formulas describing the operation of the combustion chambers of these turbine installations. The combustion chamber operates on natural gas, and is located vertically beside the turbine. The gas burner is a diffusion-type register burner, in the upper portion of the combustion chamber. The fuel gas and air are input separately and mixed basically in the volume of the flame tube. The mixer is located in the end portion of the flame tube, and consists of eight oval nozzles, through which secondary air is injected into the stream of com-

1/2

bustion products. The prototype installation was tested with a regenerator and shown to be effective (q_{chem} = 0.5%) at moderate resistances, 1.3-1.5% of the pressure before the chamber. The series-produced combustion chambers were tested without the regenerator, which changed the operating conditions considerably. The flame was considerably longer, the q_{chem} increased, and the unevenness of the temperature field beyond the chamber was too great. Changes in the cross sections of the combustion chamber channels solved the problems. The influence of diffusion and kinetic characteristics on the combustion process and limiting capacity of the combustion chamber are analyzed, in connection with a jet burner developed by the Kiev Polytechnical Institute. It is determined that the combustion process falls in the diffusion area when the compressor operates normally, with the kinetics becoming significant only under light loads.

2/2

ASOYAN, G. A.

medicine

Sc: JPRS 54435

9 Nov 71

UDC: 616.13-089.84

INTRALUMINAL SEAMLESS END-TO-SIDE CONNECTION OF ARTERIES USING A SHUNT WITH
RIGID TIPS

The combined intraluminal rigid prosthesis which we developed out of
polymer materials constructively provides the set angle of an anastomosis
(convex segment of internal oval orifice, conical form) and provides the most
favorable hemodynamic and mechanical conditions at the joint. Modulation of
vascular walls effects changes in geometry of the anastomosis only at the
outgoing orifice of the shunt, i.e. at the site of union of the lateral efferent
vessel, altering the angle of the vascular wall at the site of transition within
the range of ±1°.

The technology of manufacturing tips for the lavsan prosthesis to shunt
vessels of different calibers end-to-side is as follows. Pieces 60, 80, and
100 mm in length are prepared from a lavsan prosthesis 6 mm in diameter. One
tip is flattened over a distance of 30 mm; a longitudinal narrow wedge is
trimmed out of the wall, the base directed toward the corrugated part of the
piece. The wedge that was cut off, which is 3 mm wide at the base and 10 mm
long, is placed over a glass tube, 5.5 mm in diameter, and covered with
styracryl paste. The flap is then turned inside out, the piece is removed
and it is placed on the axis of a mold template in such a manner that the
flap would be on the posterior surface of the axis and would lie on the template
with its turned out surface. After this an insert is applied and immobilized
with a tear screw. In the front part of the template, a rim is placed over
the flattened lavsan and it is pressed down with a punch. After 30-40 minutes
the mold is taken apart and the prosthesis is removed from the axis (spindle?).
The second tip of this same lavsan piece is placed on a conical template,
covered with styracryl paste, pressed down with a punch consisting of two
halves. The mold is opened after 15-20 minutes and the rigid conical tip is
removed. Thus, we have a rigid styracryl molded head on one end of the
corrugated lavsan prosthesis (6 mm in diameter) and a smooth tapered tip on the
other. (Figure 1).

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ASOYAN G. A

REPAIR OF DAMAGED AORTIC WALL BY INTRALUMINAL SEAMLESS INSERTION OF A STYRACRYL, LAVSAN-LINED PARIETAL PLATE

UDC: 616.132-001-089.844:615.462

JPRS 55569
59 Mar 72

We conducted experiments on 12 dogs involving resection of the diameter of the abdominal aorta in a circumscribed segment or parietal defects, using an intraluminal seamless double styracryl plate. In all cases in this series of chronic experiments, we observed complete resumption of blood flow, normal function of the aorta and underlying parts of the blood system for a period of up to 20 months.

The experiment was conducted as follows. The aorta was exposed for this section above the bifurcation. The lateral branches in this section were ligated and cut. The anterior wall of the aorta was cut lengthwise between two clamps (Figure 1, a), the margins of the walls were picked up with hooks or eye forceps and spread out (Figure 1, b). The parietal double-layer lavsan plate was inserted in the opening thus formed in such a manner as to have the margins of the severed wall between the two rims of the plate and in its groove. The incision was deliberately made 0.5-1 mm shorter than the longitudinal section of the plate so that the margins of the vessel would fit rather tightly over the rim and after immobilization with a ligature would provide a hermetic joint. After the plate was inserted the drawstring ligatures (one silk, one catgut) were tied in a knot (Figure 1, c). This provided close contact between the lower surface of the plate and the vascular wall and ruled out the possibility of a fissure forming between the margin of the lower surface and the intima. The clamps were then rapidly removed and circulation restored (Figure 1, d).

The technology of manufacturing intraluminal parietal plates to repair the damaged wall of a vessel consisted of the following. A 60-70 mm piece is cut off a woven corrugated lavsan [synthetic polyester resin comparable to dacron] prosthesis, 8 mm in diameter. Then the wall of this piece is cut lengthwise, straightened and smoothed. The smooth tape thus obtained is cut into two rectangular pieces, each 20 mm long, and styracryl paste

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USSR   UDC: 681.332.65

ASOYAN, L. M., BELKIN G. G., GRIGORYAN, R. Kh., KARANYAN, K. Kh., ABADZHYAN,
S. S., GEVORKYAN, S. G.

"Parallel Barker Code to Parallel Binary Code Converter"

USSR Authors' Certificate No 249762, Filed 2 April 1968, Published 15 January
1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychis-
litel'naya Tekhnika, No 10, 1970, Abstract No 123P, by L. Sh.)

Translation: The converter suggested contains a register, each digit of which
with the exception of the low-order digit, is made of two flip-flops connected
with buses corresponding to the subdigits of Barker code and logic circuits.
The ones and zeros outputs of the flip-flops of each digit are connected to
two pairs of AND circuits respecitvely. The outputs of the AND circuits of
each pair are connected through an OR circuit and delay line to the inputs of
the second flip-flop of the same digit. The output of the OR circuit connected
to the ones output of the triggers of the digit in question is connected also
to the AND circuits connected to the outputs of the second flip-flop of the
next digit. The output of the OR circuit connected to the zero outputs of the
flip-flops is connected to the AND circuit which is connected to the outputs
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USSR

of the first flip-flop of the next digit. The ones outputs of the low-order digit flip-flop and the second flip-flops of the next digits are used as outputs corresponding to binary code. The circuit suggested combines the functions of a Barker code to parallel binary code converter with the functions of memorization of the binary code. One illustration.

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USSR   UDC 533.16+533.72

ADKHAMOV, A. A., Academician of the Academy of Sciences Tadzhik SSR; and
ASOYEV, A., Physicotechnical Institute imeni S. U. Umarov, Academy of
Sciences Tadzhik SSR

"On the Voluminal Viscosity of Gases With Rotational Degrees of Freedom"

Abstract: The coefficient of voluminal viscosity for gases with rotational
degrees of freedom for the Bryan-Pidduck model takes the form

$$\eta' = \frac{m}{s^2}\left(\frac{RT}{\pi}\right)^{1/2} \cdot \frac{(1+k)^2}{32\,k},\qquad(1)$$

where. $R = \frac{k}{m}$, $k = \frac{4J}{m\,\sigma^2}$.

However, this expression has one important shortcoming: at $k \to 0$ the
voluminal viscosity tends to infinity. Actually, η' in this limiting case
likewise must tend to zero. The purpose of the present article is to
obtain a coefficient of voluminal viscosity which is free of this short-
coming. The following coefficient is obtained:
1/2

USSR

ADKHAMOV, A. A., and ASOYEV, A., Doklady Akademii Nauk Tadzhikskoy SSR, Vol 16, No 5, 1973, pp 23-24

$$\eta_i' = \frac{R}{c_v} \cdot \frac{p_2}{\omega^2 \tau} ,$$

(8)

which tends to zero at $\omega \to \infty$, where ω is the frequency of the external process.

2/2

Fluid Dynamics

USSR

UDC 533.72

ADKHAMOV, A. A., Academician of the Academy of Sciences Tadzhik SSR, and
ASOYEV, A., Physicotechnical Institute imeni S. U. Umarov, Academy of
Sciences Tadzhik SSR

"On the Coefficients of Viscosity and Thermal Conductivity of Dense Gases
With Rotational Degrees of Freedom"

Abstract: The article considers transport phenomena in dense gases consisting
of absolutely rough and rigid spherical molecules on the basis of the
Boltzmann-Enskog kinetic equation. The molecules of such a gas possess
rotational energy which, on collision, can change to translational energy
and back. The state of each such molecule is characterized by the values
of the velocities of the translational and rotational motions. A generalized
momentum method is used to solve the kinetic equation. Expressions are ob-
tained for the coefficients of viscosity and thermal conductivity.

1/1

USSR

ADKHAMOV, A. A., Member, Academy of Sciences Tadzhik SSR, ASOYEV, A., and
NASRIDDINOV, M.

"On Kinetic Theory of Transfer Phenomenon in Dense Multiatomic Gas"

Abstract: The kinetic theory of transfer for multiatomic gases applies to low-density gas only. The present work attempts to extend this theory to the case of dense multiatomic gases.

The derivation is based on generalized Boltsman-Enskog equations. It is assumed that the impact between molecules is nonelastic.

The transfer coefficients appearing in two equations are quite complex. By means of some simplifying assumptions they can be reduced to a form which is a modified Eiken correction for dense multiatomic gases.

1/1

USSR

UDC 665.044.4.05

ASPEL', N. B., KISELEVA, E. A., and RATNER, YE. M., Leningrad

"Intensification of the Equipment for Catalytic Reforming for the Production of High Octane Gasoline"

Moscow, Neftepererabotka i Neftekhimiya, No 2, 1972, pp 3-6

Abstract: An analysis was performed of the positive and negative aspects in the utilization of the equipment for catalytic reforming. Some suggestions have been made which should lead to improved technology of the production, modernization of the plants and intensification of their utilization. The intensification could be obtained on existing equipment by slight modification of the process, or of the instruments, or by complete overhaul and modernization of the existing plants.

1/1

USSR   UDC 632.954:635.11

ASPIDOVA, ZH. V., All-Union Scientific Research Institute of Plant
Protection

"On Tests of New Herbicides on Table Beet Plantings in the Leningrad-
skaya Oblast"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 9, (83), Sep 70,
pp 43-45

Abstract: The article is a report on tests done in 1967 and 1968 to
determine the effect of new herbicides on beets.   The herbicides
tested were ronite (S-ethyl-cyclohexythiocarbamate), lenacyl (3-
cyclohexyl-5,6-trimethyleneuracil), gatnon /N-methyl-N'-(2-benzo-
thiazoyl)-urea7, betanal /3-methoxycarbonylaminophenyl-N-(3'-methylp-
henyl)-carbamate7 and SR-52,223 /2-chloro-N-(isobutoxymethyl)-2',6'-
acetoxylidide7. Under conditions of optimum soil mositure content
in the Laningradskaya Oblast in 1967, gatnon and lenacyl were found
to be as effective in killing weeds as pyramine with a weed investation
reduction of 90.7-93.8%. Under the relatively dry conditions obtain-
ing 1968, the most effective herbicide was Sr-52,223, which destroyed
up to 93.3% of the annual dicotyledenous weeds. The chemical re-
tained it toxicity for three months. SR-52,223 is most effective
1/2

USSR

ASPIDOVA, ZH. V., ████., Khimiya v Sel'skom Khozyaystve, Vol 8,
No 9, (83), Sep 70, pp 43-45

against piqweed, ordorless camomile, filed spurry and varieties of
bsitort. Common winter cress is resistant to the herbicide. Ronite,
which was applied to the moist soil before planting, was effective
against weeds (91.6-75.4% destruction) even when moisture was low
during vegetation. The selective herbicide betanal was applied
after the beets began to grow, and was effective against spurry,
pigweed, chickweed, stinging nettle and snakeweed. The new
herbicides had no adverse effects on sprouting, harvest and quality.

2/2

USSR   UDC 632.954:635.11

ASPIDOVA, ZH. V., Candidate of agricultural sciences, All-Union Institute of
Plant Protection

"The Influence of Herbicides on the Quality of Root Crops of Table Beets
with Long-Term Storage"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 9(107), 1972, pp 42-43

Abstract: The experiment measured the effects of herbicides on the quantity
of sugar, albumin and ascorbic acid in stored beets of the types Bordeau and
Egyptian. The following applications were made: pyramin, 5 kg/ha; lenacil,
2.5 kg/ha, gatnon, 6.5. kg/ha; SR-52223, 1.92 kg/ha; S-15935, 0.7 kg/ha;
eptam, 6 kg/ha, rhonite, 6 kg/ha; and betanal, 1.12 kg/ha. The root crops
were stored in a semiunderground st. rehouse with natural ventilation, a
temperature slightly above freezing and high relative humidity. The average
weight loss in 7 months ranged from 7.42% for the control to 7.14% for those
treated with lenacil. Biochemical analysis was conducted on the beets which
had been treated with herbicides recommended for the Leningrad Oblast:
pyramin, lenacil, and betanal. All types suffered similar losses in weight
of solid matter. After 7 months ascorbic acid content ranged between 50-80% of
1/2

USSR

the original, the greatest amount having been lost by the Egyptian variety treated with lenacil. There were no significant variations in sugar loss between the control and the treated beets. The general conclusion is that the herbicides had no appreciable effect on the storage   capabilities of the beets tested.

2/2

USSR

KATYS, G. P., ASRATYAN, A. A., and KRUPNOV, V. I.

"Device for Representing Information in Three Dimensions"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 33, 1972, p 115, Author's certificate No (11)357559

Abstract: The device contains a flat, semitransparent screen and an image source, the screen consisting of a series of flat liquid-crystal films with electrically controlled transparency. The films are connected to a switch which, in turn, is connected to the image source through a synchrogenerator.

1/1

– 45 –

ASRATYAN, E.A.

human nervous system

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16. Abstract
The report contains information in experimental research on memory mechanisms,
study of individual behavioral differences, types of higher nervous activity,
properties of the human nervous system, syndromes and organization of basic
nervous system properties, initial stages of perception and modeling
conditional reflexes.

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USSR

ASRATYAN, E. A., Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Genesis and Site of Conditioned Inhibition"

Abstract: During reinforcement of a conditioned reflex, the highly excited unconditioned reflex center causes inductive inhibition of the middle link in the arc of the unconditioned reflex to the conditional stimulus, but the receptor cells of the unconditional stimulus and the neurons maintaining conditioned association remain free of inhibition and therefore functional. When the reinforcing unconditional stimulus no longer acts, this inductive inhibition disappears. As a result, a postinhibitory exalted excitatory state develops in that link, inducing inhibition of the conditioned association in the initial neurons. When the reinforcement of the conditioned reflex is changed, the chain of these two-stage events is disrupted, and therefore neurons mediating the conditioned association remain in a state of prolonged trace excitation. A second change in the reinforcement is needed to develop internal inhibition. Now, the cumulative excitation of conditioned association neurons causes exhaustion and triggers generation of internal inhibition in them as a protective and recuperative process, which subsequently acquires a coordinating significance.
1/1

USSR

BEKKER, R. A., ASRATYAN, G. V., LUR'YE, E. P., and DYATKIN, B. L., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Synthesis of Fluoroolefines by the Reaction of Polyfluorochlorocarbinols With Phosphorus Pentasulfide"

Abstract: Reaction of polyfluorochlorocarbinols with P_2S_5 leads to the formation of fluoroolefines: 1,3,3-trichloro-2-methylperfluoropropanol-2 yields 1-fluoro-1,1-dichloro-2-(difluorochloromethyl)propene, b.p. 120°, and 1,3-di-chloro-2-phenylperfluoropropanol-2 yields α-(difluorochloromethyl)-β,β-di-fluorostyrene, b.p. 82°/40mm.

1/1

USSR

UDC 542.91+547.466.3

DAVTYAN, S. M., PAPAYAN, G. L., ASRATYAN, S. N., Institute of Fine
Organic Chemistry, Yevevan, Academy of Sciences Armenian SSR

"Derivatives of γ-Aminobutyric Acid. I. Synthesis of Methyl
Ethers of N-Substituted α-Phenylaminoacetic Acids and Products
of Their Reduction"

Abstract: γ-Aminobutyric acid and a number of its derivatives
are very active biologically. To study the effect of substituents
in the hydrocarbon chain and associated with the nitrogen atom,
the authors synthesized compounds with a phenyl group in the
γ-position and replaced of one or both hydrogen atoms in the amino
group by various substituents Phenylacetic acid was brominated
in the presence of red phosphorus. The resultant α-bromopheny-
lacetic ester was condensed with amines. The esters of N-substituted
α-phenylaminoacetic acids produced in this way (with the excep-
tion of the methyl ether of α-phenyl-phenylaminoacetic acid) are
liquids which readily form crystallizable hydrochlorides. When
methyl amine is interacted with the methyl ether of α-bromophenyl

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USSR

acetic acid, an amino acid amide is produced. Lithium alumino-
hydride reduction of the esters gives the corresponding amino-
ethanols (crystalline benzylaminoethanol). β-Dimethylamino-,
β-piperidyl- and β-benzylamino derivatives are synthesized
from these compounds. All alcohols form readily crystallizable
hydrochlorides. The biological properties of hydrochlorides of
esters of N-substituted α-phenylaminoacetic acids and the corres-
ponding amino alcohols were tested on anesthesized cats. Various
compounds raise blood pressure, increase respiration and intensify
the adrenalin effect. The compounds were found to be ineffective
in other biotests -- spasmolytic, anethetic, and peripheral
M-choline-reactive structures.

2/2

Pharmacology and Toxicology

USSR

PAPAYAN, G. L., ASRATYAN, S. N., and ALEKSANYAN, R. A., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR

"The Effect of Preparation 2134 on the Curarizing Effect of Drugs with Depolarizing Action"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 23, No 5, May 70, p 107

Transaltion: It has been established in studies with narcotized and decerebrate cats that the new preparation 2134 (from furan derivatives) exerts an anti-curarizing effect when administered in minimum quantities. The drug especially restores skeletal muscles, which are weakened by the effect of the usual doses of relaxants of the depolarizing type (ditiline, listenone, and decamethonium); it almost completely restores the depressed respiration produced by these relaxants.

Initial introduction of preparation 2134 in a dose of 0.5 mg/kg prevents relaxation and depression of respiration produced by twice the dose of the afore-mentioned depolarizing relaxants.

Preparation 2134 does not exert a significant influence on the curarizing effect of relaxants of a competitive type of action (paramyon and diplacin).

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USSR

PAPAYAN, G. L., et al., Biologicheskiy Zhurnal Armenii, Vol 23, No 5, May 70, p 107

A broncho-spasmolytic effect is also observed. Administered in minimum doses to decerebrate cats with natural breathing occluded by opening of the chest, it reduces the bronchial spasm produced by intravenous introduction of proserine.
    The results obtained in this study of preparation 2134 on the curarizing effect produced by curariform substances permit the conclusion that the preparation has a selective antagonistic effect with respect to depolarizing relaxants. The anticurarizing effect of the preparation is particularly pronounced when it is administered beforehand.
    A similar property which is observed in compounds of the furan series should serve as a basis for directed synthesis of more effective anticurarizing preparations which counteract the effect of relaxants.

2/2

1/3   021   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--DERIVATIVES OF GAMMA AMINOBUTYRIC ACID. I. SYNTHESIS OF METHYL
  ESTERS OF N SUBSTITUTED ALPHA PHENYLAMINOACETIC ACIDS AND PRODUCTS OF
AUTHOR-(03)-DAVTYAN, S.M., PAPAYAN, G.L., ASRATYAN, S.N.

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CIRC ACCESSION NO--AP0123605
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF TITLE ESTERS PHCHRCO
SUB2 ME (I) AND ALCS. PHCHRCH SUB2 OH (II) WAS PREPD. AND PHARMACOL.
TESTED. THUS, 14.6 G ET SUB2 NH WAS ADDED DROPWISE TO A MIXT. OF 22.9 G
PHCHBRCO SUB2 ME, SMALL AMT. NAI, AND 100 ML C SUB6 H SUB5, AND THE
MIXT. HEATED 2 DAYS TO GIVE 85.6PERCENT I (R EQUALS NET SUB2), B SUB3
123-9DEGREES, D PRIME20 1.0135, N PRIME20 SUBD 1.5040; HYDROCHLORIDE M.
153-4DEGREES. THE FOLLOWING I WERE PREPD. SIMILARLY (R, B.P. PER MM, D
PRIME20, N PRIME20 SUBD, PERCENT YIELD, AND HYDROCHLORIDE M.P. GIVEN):
NHME, 132-4DEGREES-2, 1.0718, 1.5152, 43, 114-15DEGREES; NHET,
128-30DEGREES-2, 1.0544, 1.5119, 59, 198-9DEGREES; NME SUB2,
122-4DEGREES-1, 1.0439, 1.5108, 80, 202-3DEGREES; 1,PYRROLIDINYL,
183-4DEGREES-4, 1.0743, 1.5220, 73, 182-3DEGREES; PIPERIDINO,
153-5DEGREES-7, 1.0674, 1.5279, 94, 184-5DEGREES; MORPHOLINO,
150-3DEGREES-4, 1.1099, 1.5310, 80, 199-200DEGREES; NHPH, MINUS (M.
72-3DEGREES), MINUS, MINUS, 57, 182-3DEGREES; NHCH SUB2 PH,
208-12DEGREES-5, 1.0990, 1.5630, 70, 178-9DEGREES.

CIRC ACCESSION NO--AP0123605
ABSTRACT/EXTRACT--LIALH SUB4 REDN. OF I GAVE THE FOLLOWING II (R, B.P.-MM,
D PRIME20, N PRIME20 SUBD, PERCENT YIELD, AND HYDROCHLORIDE M.P. GIVEN):
NET SUB2, 137-40DEGREES-5, 1.0394, 1.5381, 90, 135-6DEGREES; NHME,
115-20DEGREES-4, 1.0193, 1.5319, 65, MINUS; NHET, 125-30DEGREES-2,
1.0062, 1.5236, 76, 139-40DEGREES; NME SUB2, 130-5DEGREES-2, 1.0394,
1.5381, 85, 113-14DEGREES; 1,PYRROLIDINYL, 170-4DEGREES-7, 1.0681,
1.5502, 89, 186-7DEGREES; PIPERIDINO, 163-6DEGREES-5, 1.0556, 1.5486,
90, 153-4DEGREES; MORPHOLINO, 163-4DEGREES-2, 1.1061, 1.5486, 88,
158-9DEGREES; NHPH, 209-10DEGREES-4, MINUS, MINUS, 80, 143-4DEGREES;
NHCH SUB2 PH, 213-15DEGREES-7 (M. 69-70DEGREES), MINUS, MINUS, 82,
229-30DEGREES. A SOLN. OF 50 G PHCHBRCO SUB2 ME AND A SMALL AMT. OF NAI
IN C SUB6 H SUB6 SATD. WITH MENH SUB2 AND HEATED AT 120DEGREES IN AN
AUTOCLAE FOR 4 DAYS GAVE 52PERCENT PHCH(NHME)CONHME, B SUB5
185-9DEGREES, M. 83-4DEGREES.   FACILITY: INST. TONKOI ORG.
KHIM., EREVAN, USSR.

USSR   UDC 002.63:53

ASRIBEKOV, V. YE., and ILLARIONOV, N. V.

"Second Stage in the Development of Information Dissemination for Physics
and the Integral Information System"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1: Organizatsiya i
Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

Abstract: The growing volume of research and the accompanying growth in the
volume and types of primary literature require the development of secondary
information publications as a unified system which more effectively satisfies
the requests of different categories of specialists: i.e., the transition to a
second approximation which differentiates categories of readers. In the sec-
ond stage of development the secondary information system should arrive at
computer-aided practical solutions to questions regarding the satisfaction of
the demands of different categories of specialists and create the basis for
the servicing of collective and individual information consumers. A program
for the development of a journal of abstracts in physics within the limits of

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ASRIBEKOV, V. YE., and ILLARIONOV, N. V., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1: Organizatsiya i Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

the second approximation provides for the two-stage creation of more efficient searching aids. The creation of searching aids and their experimental testing in an integral computer-based physics information system are of paramount importance and serve as the basis for a qualitatively new stage in the development of information servicing.

Practical work on the design of an integral physics information system was begun in the Physics Division of VINITI /All-Union Institute of Scientific and Technical Information/ in 1966 with the creation of a detailed subject-index system for the physics of elementary particles and field theory. Detailed subject-index systems have now been developed and are in use for preparing publications of three series of systematized current-awareness information: viz,,"Particles and Fields," "Atomic Nucleus," and "Plasma." Work is under way on the creation of detailed subject-index systems for several more divisions of physics. The article describes the principal operations

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ASRIBEKOV, V. YE., and ILLARIONOV, N. V., Nauchno-Tekhnicheskaya Informatsiya,
Seriya 1: Organizatsiya i Metodika Informatsionnoy Raboty, No 8, 1971, pp 5-8

which will be included in the practical scheme for the preparation of data for
computer input and their subsequent use within the integral information system
following completion of the development of detailed subject-index systems for
all divisions of physics.

3/3

Acc. Nr: Abstracting Service: Ref. Code:
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A

86837z Activity of some enzymic systems of corticosteroido-
genesis in rats given various doses of ACTH for a prolonged
period of time. Asribekova, M. K. (Inst. Eksp. Endokrinol.
Khim. Gormonov, Moscow, USSR). Probl. Endokrinol. 1970,
16(1), 86-90 (Russ). ACTH injected at 10-50 units/kg daily for
10 days increased the wt. of adrenal glands in male mice in a
dose-dependent pattern and at 10-20 units/kg daily increased the
activity of 21-hydroxylase. At 100 units ACTH/kg injected daily
for 10 days, the activities of 21-hydroxylase and 11β-hydroxylase
decreased to less than control levels. Even at the lowest doses
used ACTH caused hyperplasia and hypertrophy of elements in
the fascicular and reticular zones of the adrenal glands.   BJJR

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Functional Analysis

USSR   UDC 518:517.948

ASROROV, YA., and ASHIROV, O., Turkmen State University imeni A. M. Gor'kiy

"Convergence of Certain Iterative Processes for the Solution of Systems of
Operator Equations"

Abstract: In the present article, various sufficient conditions for the
existence of a solution to systems of operator equations of the following
type are found:

$$x = F(x,y)$$
$$y = G(x,y).$$

The operators $F(x,y)$ and $G(x,y)$ are defined over $S \times S_1$, where S and S_1 are closed
spheres from a Banach space. It is established that the solution to the given
system of equations is the limit of certain successive approximations, and the
speed with which these approximations converge to the solution is determined.
When conditions are such that the system can be broken down into two independent
operator equations, then from one of the theorems proven in the article one
can obtain as a particular case the principle of contractive mappings (for
1/2

USSR

ASROROV, YA., and ASHIROV, O., Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Fiziko-Tekhnickeskikh, Khimicheskikh i Geologicheskikh Nauk, No 3, 1971, pp 14-20

the first equation) and the principle of majorants (for the second equation). In practical work, a system of operator equations of the following form is often encountered:

$$x = F(x,y)$$
$$P(x,y) = 0.$$

It is easy to verify that this system may be written in the form of the system indicated above and the results obtained above will apply to it.

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USSR   UDC 532.5

ASRYAN,, N. G., and GALIN, L. A.

"The Impact of a Cylindrical Shell Against the Surface of a Compressible Fluid"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gazov, No 6,
Nov-Dec 72, pp 5-10

Abstract: A solution is given for the problem of the impact of a thin cylin-
drical shell against the surface of a compressible fluid. It is assumed that
the shell is quite thin, and that the pressure acting upin it is great, and
therefore plastic deformation takes place in the shell. Under these condi-
tions the strength properties of the shell may be disregarded, and only inertial
forces need be taken into consideration during establishment of its law of
motion. The value of the wave potential is determined, as well as the value
of displacement of the shell during the impact time under consideration, and
the value of change of the pressure acting upon the shell. This problem is
reduced to determination of the potential of displacements $\Psi(x, y, t)$ in the
region of perturbed motion Ω . This region is separated from an unperturbed
region enveloping the Mach cones which originate from points of intersection of
the cylindrical shell with the free surface of the fluid. This makes it possible
to find the pressure acting upon the shell. 4 figures, 6 references.
1/1

1/2   033   UNCLASSIFIED   PROCESSING DATE--13NOV70
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AS THY SOURCE OF SCIATIC SYNDROME -U-
AUTHOR--ASS, YA.K.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIVE OBSERVATIONS OF NERVE ROOT
COMPRESSION IN THE LATERAL RECESS OF THE VERTEBRAL CANAL ARE DESCRIBED.
THE FIRST SACRAL ROOT WAS DAMAGED IN 2 PATIENTS, AND THE FIFTH LUMBAR IN
3. COMPRESSION WAS THE RESULT OF SUBLUXATION IN THE INTERVERBRAL JOINTS
ASSOCIATED WITH DEGENERATION OF THE INTERVERTEBRAL DISC, AS WELL AS
RETROSPONDYLOLISTHESIS. SUCH A LESION ACCOMPANIED GENUINE
SPONDYLOLISTHESIS IN 2 CASES. IN 4 PATIENTS DIAGNOSIS OF DISEASE WAS
ESTABLISHED PRIOR TO OPERATION ON BASIS OF COMBINATION OF CLINICAL
SYMPTOMS OF ROOT COMPRESSION WITH TYPICAL ROENTGENOGRAPHIC SIGNS.
DISCOGRAPHY WAS EMPLOYED IN EXCLUDE THE POSSIBILITY OF HERNIAL
PROTRUSION. OPERATIONS WERE DONE TO 4 PATIENTS. THE INTERVENTION
CONSISTED IN DECOMPRESSION OF THE NERVE ROOT BY MEANS OF PARTIAL OR
TOTAL FACETECTOMY WITH SUBSEQUENT FIXATION (IN 3 PATIENS) OF THE
LUMBOSACRAL SPINE. THE PATIENTS REMAINED UNDER OBSERVATION FOR 2-7
YEARS. THE ROOT PAINS DISAPPEARED IN ALL PATIENTS, FROM TIME TO TIME
LUMBAR PAINS WERE OBSERVED IN 2 PATIENTS.   FACILITY: KAFEDRY
TRAVMATOLOGII I ORTOPEDII PERMSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR   UDC 581.14:632.4:582.285:633.63

POZHAR, Z. A., and ASSAUL, B. D., All-Union Scientific Research Institute of
Sugar Beets, Kiev

"Biology of the Pathogen of Sugar Beet Rust Uromyces betae (Pers.) Lev"

Leningrad, Mikologiya i Fitopatologiya, No 5, No 2, 1971, pp 166-171

Abstract: The pathogen passes through five stages in its development: basidial,
spermagonial, aecidial, uredal and teleutal. The importance of each stage in
the development of the disease was studied. It was found that immediately
after formation of the teleutospores, their number increases only insigni-
ficantly (up to 1-2%). The teleutospores are the principal form in which the
fungus over winters. Teleutospores on the soil surface represent the greatest
threat to spring plants. The emergence of rust in the spermagonial and aecidial
stages is usually observed in the first half of May or, depending on the
weather conditions, at the end of April or in the latter part of May. These
forms of the fungus affect plant leaflets. As the aecidiospores are taken up
by water, which then is absorbed by the plant, they infect the plant. The
optimum temperature for their growth and plant infection was found to be 14-
15°C, but they develop and represent a danger at temperatures ranging from
+4° to 24°C. The incubation period after infection of the beet leaflets, at
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POZHAR, Z. A., and ASSUAL, B. D., Mikologiya i Fitopatologiya, No 5, No 2, 1971, pp 166-171

a temperature of 16-23°C, is 14 to 28 days. As a result of the infection of plants by aecidiospores, the uredostage of the pathogen appears and reddish-brown uredospores are observed on the stems of seed plants. The incubation period after infection by uredospores varies from 8 to 32 days. The optimum temperature at which the shortest incubation period is observed is 17-19°C. As the temperature rises, the incubation period is prolonged. The development of rust progresses, usually at the moderate temperature of early summer and fall. When the mean daily temperature is 22°C and above, the development of rust is inhibited. This principle has also been observed with other fungus infections. Measures for controlling sugar beet rust and for elimination of existing foci are proposed.

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