

2/2 018

UNCLASSIFIED

PROCESSING DATE--23JCT70

CIRC ACCESSION NO--AP0123474

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING A COMPLEX OF CURRENT FUNCTIONAL AND MORPHOLOGICAL METHODS OF INVESTIGATION IN PERSONS AT THE AGE OF 19-26 YEARS HAVING A CLINICAL PICTURE OF CHRONIC GASTRITIS (165) AND FUNCTIONAL AFFECTIONS OF THE STOMACH (95), THE AUTHOR REVEALED DISCREPANCY IN THE CLINICAL AND MORPHOLOGICAL DIAGNOSIS IN 32.0PERCENT OF THE CASES. FUNCTIONAL DISORDERS WERE CHARACTERIZED BY AN INCREASED SECRETION, ACIDITY (85PERCENT) HIGH CONCENTRATION OF GASTROMUCOPROTEID (65PERCENT), NORMAL CONTENT OF POLYSACCHARIDES OF THE GASTRIC JUICE, NORMAL AND INCREASED EXCRETION OF NEUTRAL RED (92PERCENT), ACCELERATION OF THE MOTOR EVCUATORY FUNCTION (70PERCENT). HISTOCHEMICAL CHANGES WERE REVEALED IN THE GASTRIC MUCOSA.

USSR

UDC 612.133.08

LEBEDEV, V. P., and GOLUBEV, A. P., Laboratory of the Physiology of Blood Circulation, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Recording Arterial Blood Pressure by Means of an Unspecialized Tape Recorder in a Form Suitable for Subsequent Digital Analysis"

Leningrad, Fiziologicheskiy Zhurnal, No 2, Feb 72, pp 285-286

Abstract: A general-purpose tape recorder which is not suitable for recording signals with a constant component has been adapted for use as a readily available intermediate storage unit to collect data for subsequent digital processing. For this purpose, the constant arterial-pressure curve is not recorded, but only its amplitude values; these, in the form of short pulses, can be taken down on an ordinary tape recorder. In this manner, it is also possible to record several processes on a single track by taking down several coordinates of different processes with a definite time sequence. When the same sequence is observed in the read-out process, separate digital measurements of the several processes can easily be accomplished.

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LEBEDEV, V. P.

SPK 5 451005
6-73

IV-4. APPLICATION OF THE METHOD OF SECONDARY ION-ION EMISSION TO STUDY THE SURFACE OF ATIBY STRUCTURE

[Article by V. P. Lebedev, A. G. Korol, V. A. Kabanov, V. P. Lebedev, S. S. Strel'chuk, and V. V. Shubin, *Nat'kov Rezer: Novosibirsk, II Sibirskii nauchnyy tsentr, I Sibirskii Poliprovedniknyi Institut, Fizmat, Permian, 22-23 June 1972, p. 41*]

The use of the method of secondary ion-ion emission is discussed in this paper to study the surface of Al₂O₃ semiconductor compounds. This method was used successfully previously [1] to study the surface reactions on the atomic level.

The research performed demonstrated that the area spectrum of the secondary ion-ion emission from crystals of various types of Al₂O₃ is independent of the amount of the surface layer and is independent of the surface area.

In the first group of the Ca₂O₂, Ca₂W₂ and Ca₂As₂ type were observed the origin of which is related to the surface contamination. The study of the temperature dependence of these ions demonstrated that the gallium secondary surface is cleaned in a vacuum of 10⁻⁷ mm Hg at a temperature of 400°C.

In the second group of pyrites, ions of the Ca₂As₂ type were observed. In this paper there is a discussion of possible mechanisms of their occurrence connected with the characteristic features of the chemical bond in gallium arsenide.

A study was made of certain aspects of the application of the method of secondary ion-ion emission to the study of the processes of the formation of nucleating centers for growth of heteroepitaxial layers.

BIBLIOGRAPHY

1. Ya. M. Popel', *Usp. [Progress in the Physical Science]*, No 91, 1075, 1967.

Instruments and Equipment

USSR

UDC 612.82.089

LEBEDEV, V. P., KELLER, O. K., and CHERVINSKIY, P. P., Laboratory of the Physiology of Blood Circulation, Institute of Physiology imeni Pavlov, Academy of Sciences USSR, and All-Union Scientific Research Institute of High Frequency Currents imeni Vologdin, Leningrad

"An Improved Ultrasonic Device for Nontraumatic Cutting of Brain Tissue"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 1, Jan 72, pp 138-141

Abstract: As has been shown in earlier work by Lebedev et al., use of a cutting instrument to the edge of which axial vibrations of ultrasonic frequency are imparted reduces considerably mechanical deformation of tissues that are being cut and the damage to these tissues. This is particularly important as far as the tissues of the brain are concerned. Furthermore, an ultrasonic knife has an inherent hemostatic effect. An ultrasonic cutting instrument has been developed the handle of which contains an electroacoustic converter. The generator to which the instrument is connected has a maximum power of 100 wt. The vibration frequency of the instrument is controlled automatically. At a working frequency of 22 kilocycles \pm 1.5%, the amplitude of vibrations of the instrument with a weight not exceeding 110 g amounts up 1/2

USSR

LEBEDEV, V. P., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova,
Vol 58, No 1, Jan 72, pp 138-141

to 32 microns. Two instruments with different acoustic power can be connected to the generator. The ultrasonic knife will be particularly useful for precision cuttings of brain tissue such as partial chordotomy or cutting into the cortex. It can be fastened to the manipulator of a stereotaxic apparatus.

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USSR

UDC 539.376

GINDIN, I. A., KHOTKEVICH, V. I., NEKLYUDOV, I. M., LEHNEDEV, V. P., and BOBONETS, I. I., Physicotechnical Institute, Academy of Sciences, Ukrainian SSR and Khar'kov State University imeni A. M. Gor'kij

"Change in Nickel Dislocation Structure and Properties at Varying Loading Rates"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul-Aug 71, pp 139-144

Abstract: Results of investigating the structural change and properties of polycrystalline nickel in relation to rate and degree of pre-strain are presented. Pure nickel (99.996%) in the form of strip rolled at room temperature was used which was annealed at 900°C for one hour in a vacuum resulting in a grain size of 0.3 μm. Loading the samples was accomplished in a special unit at 200°C up to various degrees of strain with rates of 0.2 and 1×10^3 kg/mm²-hr followed by elongation at room temperature at the rate of 30 mm/sec. Electrical resistance was measured after cooling to 77°K. It was found that for relatively rapid rates of loading, principles governing change of resistance to deformation, electrical conductivity, and dislocation structure are observed which are normal for fcc crystals. For slower 1/2

USSR

GINDIN, I. A., et al., Fizika Metallov i Metallovedeniye, Vol. 32, No 1,
Jul-Aug 71, pp 139-144

rates of loading, when diffusion processes play a substantial role, deviations from these principles are possible. Slow loading rates in the macroelastic region promote diffusion redistribution of defects into energetically suitable points, promote coalescence of point defects, and promote formation of dislocation loops. These processes lower electrical resistance and increase yield strength upon subsequent strain of samples. Five figures, 21 bibliographic references.

2/2

Explosives and Explosions

USSR

UDC 541.124/.128

STRAKHOV, B. V. LEBEDEV, V. P. (DECEASED), and KOBZEV, N. I.,
Moscow State University imeni M. V. Lomonosov, Moscow, Ministry
of Higher and Secondary Specialized Education RSFSR

"Explosive Oxidation of Nitrous Oxide in Mixtures with Ozone"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp
1664-1669

Abstract: The formation of NO upon explosion of $N_2O + O_3$ mix-
tures by means of an electric spark was studied. At an initial
pressure of 200 mm Hg, the maximum yield of NO (14.9 vol %) was
obtained at 40 vol % O_3 . For mixtures with a constant O_3 content
of 40 vol %, the maximum yield of NO in the 0-900 mm Hg pressure
range was at 200 mm Hg. Partial replacement of N_2O with N_2 lowered
the yield of NO. Calculations on the assumption that the reaction
proceeded by the mechanism $N_2 + O_2 \rightarrow 2NO$ after decomposition of
 N_2O led to results which did not agree with data on the reaction
equilibrium obtained in the experiments. The experimental results
could be explained satisfactorily with respect to development of
an NO yield maximum and the position of this maximum by assuming
the mechanism $N_2 + 1/2 O_2 \rightarrow 2NO$; $2NO \rightarrow N_2 + O_2$.

1/1

1/2 041 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF THE SUPERCONDUCTING STATE ON THE CREEP OF METALS -U-
AUTHOR--(04)-GINDIN, I.A., LAZAREV, B.G., LEBEDEV, V.P., STARODUBOV, YA.D.
COUNTRY OF INFO--USSR
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 280-90
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--METAL CREEP, INDIUM ALLOY, THALLIUM ALLOY, MERCURY, MECHANICAL
PROPERTY, SUPERCONDUCTING ALLOY, SUPERCONDUCTIVITY, CRYSTAL DISLOCATION,
TIN, LOW TEMPERATURE EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0925 STEP NO--UR/0396/70/011/005/0280/0290
CIRC ACCESSION NO--AP0116435
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF ELECTRONS ON THE MECH. PROPERTIES WAS STUDIED FOR SUPER CONDUCTING IN, TL, HG, AND SN UNDER CREEP CONDITIONS AT 1.8-4.2DEGREEK. IN ALL OF THE CASES A WEAKENING WAS OBSD. DURING THE CREEP TESTS IN THE SUPERCONDUCTING STATE AS SHOWN BY A MARKED INCREASE IN THE CREEP, THE EFFECT INCREASING AS THE TEMP. IS LOWERED BELOW T SUBC. THE INCREASE IN THE WEAKENING BELOW T SUBC MAY BE DUE TO A DECREASE IN THE RETARDATION OF THE MOVING DISLOCATIONS AS THE NORMAL COND. ELECTRONS ARE EXHAUSTED.
FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 51:621.391

LEBEDEV, V. S.

"Synthesis of an Order 3 Logic Net of Threshold Elements with Matrix Representation of Boolean Functions"

Sovrem. Probl. Kibernet. [Modern Problems of Cybernetics -- Collection of Works], Moscow, Nauka Press, 1970, pp 231-243 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V347).

Translation: A method is presented for synthesis of a logic net of order 3 (depth 2) of threshold elements, realizing an arbitrary function in logical algebra. The synthesis algorithm is based on analysis of a matrix representation of the function to be realized.

1/1

- 27 -

1/3 . 010 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ISOTOPIC COMPOSITION OF CARBON IN NATURAL GASES NORTHERN WEST
SIBERIAN LOWLAND IN RELATION TO THEIR ORIGIN -U-
AUTHOR-(05)-YERMAKOV, V.I., LEBEDEV, V.S., NEMCHENKO, N.N., ROVENSKAYA,
A.S., GRACHEV, A.V. L
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. SSSR 1970, 190(3), 683-6 (GEOCHEM)
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--NATURAL GAS, CARBON, ISOTOPE, RADIOCARBON DATING, GEOLOGI
SURVEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0272

STEP NO--UR/0020/70/190/003/0683/0686

CIRC ACCESSION NO--AT0055068

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/3 '010

CIRC ACCESSION NO--AT0055068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW NATURAL GAS PROVINCE, CONTG. RICH RESOURCES, WAS DISCOVERED RECENTLY IN THE NORTHERN PART OF WEST SIBERIAN LOWLAND. THE GAS DEPOSITS THERE ARE CONFINED TO THE CENOMANIAN STRATA FORMING AN UPPER PART OF THE POKURSK OILBEARING SERIES (APTIAN-ALBIAN-CENOMANIAN) WHICH CONSIST MOSTLY OF CONTINENTAL COASTAL MARINE FACIES. THE ISOTOPIC COMPN. OF C IN THESE GASES WAS DETD. AND COMPARED WITH THE POB (THE CHICAGO STD. WITH PRIME12 C- PRIME13 C EQUALS 98.99PERCENT) TO DET. THE ORIGIN OF GAS IN THESE DEPOSITS. THE DEPOSITS OCCUPY A SPECIAL POSITION AMONG THE OTHER NATURAL GAS DEPOSITS OF YOUNG PLATFORMS, SITUATED IN MESOZOIC FORMATIONS, BEING MUCH RICHER IN PRIME12 C ISOTOPE (DELTA PRIME13 C FROM MINUS 5.83 TO MINUS 6.78PERCENT). E.G., THE GASES OF BUKHARA-KHIVA (TURANSK PLATFORM) HAVE DELTA PRIME13 C FROM MINUS 3.02 TO MINUS 3.82PERCENT AND GASES IN KRASNODAR DEPOSITS (SCYTHIAN PLATFORM) HAVE DELTA PRIME13 C VARYING FROM MINUS 3.76 TO MINUS 4.66PERCENT. THE DELTA PRIME13 C OF NORTHERN WEST SIBERIAN DEPOSITS IS VERY SIMILAR TO THAT OF THE MARSH GASES IN EUROPEAN PARTS OF THE U.S.S.R. WHERE IT VARIES FROM MINUS 5 TO MINUS 4.9PERCENT. THE DEGREE OF ORG. SUBSTANCE METAMORPHISM INDICATED THAT CONDITIONS OF GAS FORMATION IN NEW DEPOSITS WERE SIMILAR TO THE COALIFICATION IN APTIAN-ALBIAN-CENOMANIAN DEPOSITS AND TO GAS FORMATION IN RECENT MARSHES. THE MIGRATION OF GASES FROM DEPOSITS, UNDERLYING THE POKURSK SERIES, WAS EXCLUDED BY THE DATA ON ISOTOPIC COMPN. OF HYDROCARBON GASES OBTAINED DURING TESTING OF DEEP HORIZONS IN SOME OF THESE DEPOSITS (DELTA PRIME13 C FROM MINUS 3.85 TO MINUS 4.56PERCENT).

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0055068

ABSTRACT/EXTRACT--THE SOURCE OF GASES, DURING FORMATION OF THESE GAS
DEPOSITS, WAS THE COAL SUBSTANCE SCATTERED IN THE ROCKS OF THE
APTIAN-ALBIAN-CENOMANIAN COMPLEX.

UNCLASSIFIED

Polymers and Polymerization

USSR

UDC 541.64:547.39:674.03

LEBEDEV, V. T., SUMINOV, S. I., SHIKYAYEVA, G. V., KARPOV, V. L., and NOVIKOV, V. Ya.

"Effect of the Addition of Organophosphorus Compounds on the Polymerization of Methyl Methacrylate in Cellulose"

Moscow, Vysokomolekularnyye Soyedineniya, Vol 14, No 2, Feb 72, pp 422-426

Abstract: The effect of various classes of organophosphorus compounds on the kinetics of radiation induced polymerization of methyl methacrylate [MMA] in cellulose was studied. The influence of dialkyl-, and trialkyl phosphites and trialkyl phosphates, as well as the effect of the size of alkyl radical within a group on the polymerization rate of MMA in wood was found to be increasing in the order: dialkyl phosphites < trialkyl phosphites < trialkyl phosphates, and within the radical group: methyl < ethyl < butyl analog. It was demonstrated that the concentration of tributyl phosphate [TBP] in MMA has a positive effect on the combustibility of the wood-plastic material [WPM]: a 30% content of TBP imparts fire retarding properties on the WPM. Study of the physical-mechanical properties of WPM containing various concentrations of TBP showed that optimal resistance to static bending across the fibers and to shearing along the fiber length is shown in WPM prepared from a 9:1 mixture of MMA:TBP.

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USSR

LEBEDEV, V. T., SUMINOV, S. I., SHIRYAYEVA, G. V., and KARPOV, V. V.

"Effect of the Addition of Organophosphorus Compounds on the Polymerization of Vinyl Monomers in Wood Cellulose"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 3, Mar 71, pp 601-603

Abstract: Gamma initiated modification of wood cellulose was studied with mixtures of vinyl monomers and different levels of organophosphorous compounds (OPC). Many OPC accelerated polymerization of vinyl monomers in wood cellulose, this action decreasing in the following order: trialkyl phosphates > trialkyl phosphites > dialkyl phosphites, and within these groups methyl > ethyl > butyl. Treating birch with a mixture of methylmethacrylate and triethyl phosphate (9:1 ratio) gave a fire resistant material of greater strength than comparable control. Styrene, which normally polymerizes with difficulty under the influence of radiation was also studied. Addition of 10% of dimethyl phosphite to styrene increased its polymerization in aspen by 4 times. When the phosphite fraction was increased to 20%, the polymerization rate was increased 6-7 fold in comparison to the control.

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UDC 531.385

USSR

LEBEDEV, V. V. and CHINAYEV, P. I., Kiev Higher Engineering-Aviation Military Academy of the Air Defense Forces

"Moments Acting on a Spherical Rotor in a Magnetic Suspension"

Leningrad, Priborostroyeniye, Vol 16, No 5, 1973, pp 85-88

Abstract: An ideal sphere, uniform and isotropic in density, geometry and magnetic properties, rotating in a vacuum under magnetic suspension, could provide a loss-free rotor. For real rotors, the anisotropies of composition can be represented geometrically, replacing the sphere with an ellipsoid. Polarity reversal, rotational hysteresis and eddy current losses are represented by a constant lag angle of rotor magnetization vector components. The moment acting on the rotor can then be expressed as a function of the magnetic permeability of the vacuum, the volume of the spherical rotor, the magnetization vector and the vector of direction of the external field. In addition to the braking moment due to losses in the rotor material, there are two orthogonal precession moments, a tangent moment determined primarily by deviations from the perfect spherical form and a radial moment due to losses in the rotor material. The precession moments are due to the interaction of the external field component directed along the axis of rotation of the rotor and the magnetization component

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USSR

LEBEDEV, V. V. and CHINAYEV, P. I., *Priborostroyeniye*, Vol 16, No 5, 1973, pp 85-88

perpendicular to the axis of rotation and opposite to the corresponding component of the external field. If one of these constituents coincides with the projection of the field direction vector on the equatorial plane, a spiral precession results, which brings the vector of rotation in line with the external field. Since losses in the material are usually quite significant, the precession appears close to radial. If there are no losses in the material, a moment perpendicular to the planes of the external field and of rotation leads to an undamped precession with an angular velocity depending on the geometric aberration of the rotor.

The braking moment of a given instrument can be determined by letting it run free in a vacuum, while the precessional trajectory can be determined by observation, thus making it possible to determine which factor (spherical error or dissipation) is dominant, and to determine quantitatively the rotor quality, the isotropic quality of its material and the amount of loss.

2/2

USSR

UDC: 621.378.329 (62)

BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. N., LEBEDEV,
V. V., NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of the Cavity in a Semiconductor Laser With
Electron-Beam Pumping"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 4(8), 1972,
pp 61-68

Abstract: A method is described for creating a cavity with waveguide structure in a semiconductor laser with electron-beam pumping. It is shown that waveguide modes are stimulated in such a cavity, with the result that the emission threshold is independent of the energy of the electrons, and the radiation pattern has a structure which is more complex than in a uniform cavity. This type of cavity reduces the emission threshold to 0.3 A/cm² (in the 15-20 keV electron energy region), which is 1-2 orders of magnitude lower than in a cavity of homogeneous structure. Five illustrations, four tables, bibliography of nine titles.

1/1

LEBEDEV, V. V.

Gyroscopes

SO: JPRS 59940
8 R6 B

Carla

Gyroscopes

DOC 531, 385

MOMENTS ACTING ON A SPHERICAL ROTOR IN A MAGNETIC SUSPENSION

Article by V. V. Lebedev and P. S. Chikmagov, *Vysokaya Militaria*, Section Engineering of Scientific Research, No. 5, 1971, recommended by the Academy, submitted 9 October 1970, pp. 85-88.

Moments due to the non-sphericity of a sphere and the distribution of energy in the material of the rotor are considered. The dependences between the braking moments and precession moments are established, and methods of their practical determination are indicated.

A contactless magnetic suspension of a body rotating in a vacuum may serve as a basis in the development of precision gyro instruments of increased accuracy. If we select an ideal ball/homogeneous, isotropic, from the standpoint of weight, geometry, and magnetic properties, in the absence of dissipation of energy in the material of the rotor no moments will act on it. At the same time, any deviations of the ball from an ideal sphere will lead to the appearance of braking moments and moments of precession. The magnitude of the moments of precession applied to the rotor is a measure of its freedom as a gyroscope.

We will assume that an imperfect ball of an isotropic material may be replaced by an equivalent ellipsoid with semiaxes a, b, c , of a homogeneous material with a permeability μ and with demagnetizing factors that are different in magnitude:

$$N_x \neq N_y \neq N_z.$$

We will consider that losses to remagnetization, rotary hysteresis, and eddy currents may be considered by introducing the constant angle γ_M by which the components of the magnetization vector M , perpendicular to

USSR

UDC 621.373.826:535

GAYNER, A. V., KRIVOSHCHEKOV, G. V., KRUGLOV, S. V., LEBEDEV, V. V., and
MARENNIKOV, S. I.

"Studying the Characteristics of a Wide-Angle System for Converting Images From
Infrared to Visible Region"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics --- collection of
works), Vyp. 2, Novosibirsk, 1972, pp 360-366 (from RZh-Radiotekhnika, No 11, Nov
72, Abstract No 11 D144)

Translation: None.

UDC 621.362.5

USSR

ZVYAGINA, S.N., KILIPENKO, V.V., LEBEDEV, V.V.

"Ceramic Thermojunctions Applicable To Thermoelectric Devices"

Khoolodiy'n. tekhn. i tekhnol. Resp. mezhved. nauchno-tekhn. sb. (Refrigerator Engineering And Technology. Republic Interdepartmental Scientific-Technical Collection) 1970, No 9, pp 17-23 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970. Abstract No 12B22)

Translation: Effective thermojunctions with minimum temperature losses have been developed. A method is proposed for chemical nickel plating of a ceramic, assuring a strength for bonding it with commutation plates of not less than 150 kg/cm². A model technological process is developed for preparation of thermojunctions on ceramic films, on the base of which thermojunctions from cerium of various sorts are produced. Specimens successfully withstood tests for mechanical stability, moisture resistance, thermal shock, electrical breakdown, etc. Author's Summary.

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USSR

KONSTANTINOV, B. P. (Deceased), BREDOV, M. M., KOLCHIN, A. A., LEBEDEV, V. V.
and SKREBTSOV, G. P., Physicotechnical Institute imeni A. F. Ioffe, Academy of
Sciences USSR

"Investigation of Proton Fluxes in the Range 1.5-50 Mev on the 'Zond-4' and
'Zond-5' Automatic Interplanetary Station"

→ Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 11, Nov 70,
pp 2250-2254

Abstract: A brief description of the equipment used and the data obtained on
"Zond-4" and "Zond-5" is presented. "Zond-4" was launched toward the moon on
2 March 1968 and "Zond-5" on 15 September 1968. Two proton detectors were used,
one detecting protons in the ranges 1.5-10 Mev and 10-21 Mev and the other to
detect protons in the ranges 30-35 Mev and 45-50 Mev. No other particles besides
protons were recorded. Measurements beginning at a distance of $3.5 R_E$ are summa-
rized, concentrating on data from "Zond-5". It was noted that "Zond-5", in accord-
ance with the flight program, sometimes changed orientation and maneuvered in space;
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USSR

KONSTANTINOV, B. P., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 11,
pp 2250-2254

the average counting intensity in all channels remained approximately the same, thus making it possible to speak of the "average intensity" of the proton flux. The magnitudes of the average intensities of proton fluxes obtained were: 1.5-10 Mev, $I = 0.5 \cdot 10^3 \text{ m}^{-2} \cdot \text{str}^{-1} \cdot \text{sec}^{-1}$; 10-20 Mev, $I = 40 \text{ m}^{-2} \cdot \text{str}^{-1} \cdot \text{sec}^{-1}$; 30-35 Mev, $dI/dE = 35 \text{ m}^{-2} \cdot \text{str}^{-1} \cdot \text{sec}^{-1} \cdot \text{Mev}^{-1}$; and 45-50 Mev, $dI/dE = 50 \text{ m}^{-2} \cdot \text{str}^{-1} \cdot \text{sec}^{-1} \cdot \text{Mev}^{-1}$. A table is given comparing the intensities of proton fluxes in the range 1-10 Mev obtained with U.S. and Soviet space probes from 1964 to 1969.

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AA0040714 Lebedev, V. V.

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240702 UREA PRODUCTION from NH_3 & CO_2 , using converted natural gas as CO_2 source, and as H_2 source for NH_3 synthesis, is intensified and energy losses reduced, by total or partial injection of the converted natural gas feed at 30 kg/cm² with ammonium carbonate solution and liquid ammonia at 600-1000 kg/cm² to absorb CO_2 from the feed. Part of the converted natural gas is compressed and introduced at the base of the urea synthesis tower, at a temp. higher than the temp. of synthesis, and assists concentration of the urea melt.

6.7.67. as 1171649/23-26, GORLOVSKI, D.M. et al. (12.8.69) Bul. 13/1.4.69. Class 12b, Int. Cl. C 07c.

1/2

LD 7

19750354

AA0040714

AUTHORS: Corlovskiy, D. M.; Kucheryavyy, V. I.; Lebedev, V. V.;
Al'tshuler, L. N.; Levenkova, N. I.; Mal'nikov, B. P.;
and Gumenyuk, V. F.

19750355

2/7

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ABSORPTION OF AMMONIA FROM UREA PRODUCTION WASTE GASES -U-

AUTHOR--(05)-STRIZHE/SKIY, I.I., ZAKAZNOV, V.F., LEBEDEV, Y.V., SIDORINA,
I.YU., MELNIKOV, S.P.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,102
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIA, UREA PRODUCTION, GAS ABSORPTION, FLAME EXTINCTION,
CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1743

STEP NO--UR/0482770/000/000/0000/0000

CIRC ACCESSION NO--AA0135984

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

272 019

CIRC ACCESSION NO--AA0136984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB3 IS ADSORBED FROM WASTE GASES CONTG. A COMBUSTIBLE H-O MIXT. BY WASHING OFF NH SUB3 UNDER PRESSURE IN AN ABSORBER WITH SIMULTANEOUS NEUTRALIZATION OF THE REMAINING DANGEROUSLY EXPLOSIVE MIXT. NEUTRALIZATION IS CARRIED OUT BY FILLING THE ENTIRE VOL. OF THE ABSORBER WITH A GRANULATED FILLING WITH CRIT. DIAMS. OF FLAME EXTINGUISHING CANALS THAT SIGNIFICANTLY INCREASE THE RING WITH DIAM. SMALLER THAN OR EQUAL TO 10 MM UNDER INITIAL ATM. PRESSURE IN THE ABSORBER OR A CORUNDUM FRACTION OF 1-2 MM UNDER AN INITIAL PRESSURE OF SMALLER THAN OR EQUAL TO 18 ATM IN THE ABSORBER IS USED AS THE GRANULATED FILLING. FACILITY: STATE SCIENTIFIC RESEARCH AND DESIGN INSTITUTE OF THE NITROGEN INDUSTRY.

UNCLASSIFIED

USSR

UDC 621.375.82



BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. M., LEHNEV, N. V.,
NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of a Resonator in a Semiconductor Laser With Electron
Beam Pumping"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 2, Moscow, "Sov. radio", 1972, pp 61-68 (from RZh-Fizika, No 10,
Oct 72, Abstract No 10D999)

Translation: A method is described for developing a waveguide structure of
a resonator in a semiconductor laser with electron beam pumping. It is
shown that modes of a waveguide type are excited in such a resonator, as a
result of which the oscillation threshold is independent of the electron
energy and the directional diagram has a more complex structure than in a
homogeneous resonator. Use of the resonator makes possible a reduction
in the oscillation threshold to 0.3 a/cm^2 (in the electron energy range of
15-20 keV), which is less than in a laser with a homogeneous resonator by a
factor of 1-2. 9 ref. Authors abstract.

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LEBEDEV, V.V.

SPB 59208
6-73

VII-3 EFFECT OF GROWTH RATE FACTORS IN THE GROWTH ZONE ON THE GROWTH PRO-

cesses of crystallization in the CHLORINE SYSTEM
Article by A. A. Kozlov, G. B. Lun'kina, S. S. Stepi'chenko, V. V. Lebedev,
Leningrad University, Institute for Problems in Mechanics, USSR Academy of Sciences,
Moscow, USSR, 192519, 192519, 192519, 192519, 192519, 192519, 192519, 192519, 192519, 192519

The growth of epitaxial layers of sodium arsenide in a chloride flow system (for a H_2 and H_2) is determined to a significant degree by the processes taking place in the source zone.

Under the assumption that the mass delivery of the components of the vapor-gas mixture to the surface of the source (also) is a result of molecular diffusion, a quantitative calculation was made of the degree of saturation of the reaction at the substrate time in a broad range of variation of the linear velocities. The experimental results obtained satisfactorily coincided with the calculated results.

The equations of thermodynamic equilibrium in the source zone were compiled and calculated on a computer taking into account the degree of completion of the interaction [8]. The partial pressures of the components of the vapor-gas mixture were calculated in a broad temperature range (for $B = 0.1$, $0.2, 0.3, \dots, 0.9$).

A study was made of the effect of the degree of completeness of the interaction on the composition of the gas phase in the crystallization zone and the growth rate of the epitaxial layers.

USSR

UDC: 532.529

KISEL'NIKOV, V. N., LEBEDEV, V. Ya., ROMANOV, V. S., VYALKOV, V. V.,
BARULIN, Ye. P. KORCHIKIN, V. A.

"Study of Distribution of Concentration of Solid Phase in a Horizontal Two-phase Flow"

Tr. Ivanov. Khim.-Tekhnol. In-ta [Works of Ivanovo Institute of Chemical Technology], 1972, No 13, pp 134-138 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12B998, by V. K. Starkov)

Translation: Results are presented from an experimental study of the distribution of concentrations of the solid phase both over cross sections and over the length of a horizontal pipe (pneumatic feed) for various products and various hydrodynamic modes of the two-phase flow. The distribution of the solid phase through the cross sections of the pneumatic feeder was determined by the method of sectors and by trapping of material with a special multi-level trap with subsequent weighing of the products collected in each level of the trap. The studies were performed using the following materials: spherical silica gel ($d=3$ mm), cylindrical silica gel ($d=4$ mm, $h=4$ mm), SG-1 resin ($d=5$ mm), granulated urea ($d=1.5$ mm and 2 mm), ammonium sulphate ($d=1$ mm). The air flow was varied between 39 and 52 m^3/hr , material flow -- between 27 and 90 kg/hr. The

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USSR

Kisel'nikov, V. N., Lebedev, V. Ya., Romanov, V. S., Vyalkov, V. V.,
Barulin, Ye. P., Korochkin, V. A., Tr. Ivancv. Khim.-Tekhnol. In-ta, 1972,
No 13, pp 134-138.

experiments established that there is uneven distribution of concentrations
both through the height of the cross section and along the length of the pipe
and that this unevenness increases with increasing flow rate, size and density
of particles. The corresponding graphs are presented. Six biblio. refs.

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- 93 -

Chemistry

LEBEDEV, Ya. S.

Article by doctors of Chemical Sciences Ya. S. Lebedev and V. G. ...
M. I. ...
M. I. ...
M. I. ...

The Sixth International Symposium on Free Radicals was held from 21 August to 4 September in Lyons, France. The composition of the participants was very representative -- many leading scientists working in the area of the chemistry of free radicals and EPR spectroscopy were present.

The program of the symposium included not only questions of the physics and chemistry of free radicals but also a number of related rapidly developing problems -- the application of radicals as tags and "sondars" to study the structure of complex molecules and of solids and liquid matrices; the relation of nuclear and electronic spins in radical reactions; the formation of excited particles, etc.

Extensive survey reports ordered by the leading scientists in the field were read and 40 short reports on original results. A considerable portion of the reports were devoted to experimental methods of studying active states of molecules in general and radicals in particular.

In the lecture on the theory of the structure of molecules and radicals given by M. G. Carter and G. V. Viskov (USA), the author considered the problem of the structure of radicals in various environments. It was pointed out that the structure of radicals is determined by the interaction of the radical with the environment. The author also discussed the problem of the structure of radicals in the condensed phase (for example, NMR spectroscopy with frequency sweep is used). The method of microwave spectroscopy with the use of multi-resonant electron beams has

LEBEDEV, Ya. S.

ELEMENTARY PROCESSES OF HIGH-ENERGY CHEMISTRY

(Conference in Moscow)

Article by Corresponding Member of the AS USSR V. L. Tal'cova and Doctor of Chemical Sciences Ya. S. Lebedev, Moscow, VESTNIK Khimicheskoi Nauki, Russian, Vol. 21, No. 20, October 1971, pp 22-106

The chemistry of high energies combines radiation chemistry, photochemistry, plasma chemistry and a number of other areas of chemical kinetics, characteristic of which is the course of processes under nonequilibrium conditions. A joint discussion of elementary processes in these areas of chemistry was undertaken for the first time in a 1963 symposium, the Second All-Union Conference on Elementary Processes of High-Energy Chemistry held in June of this year by the Scientific Council for High-Energy Chemistry and the Institute of Chemical Physics of the AS USSR; it set itself the goal of discussing all together the questions which had arisen in the years which had passed in that rapidly developing area of science. Participating in the conference were over 100 scientists from 25 cities of the USSR; 20 reports were about 100 teachers in the arguments were heard. In the years since the first symposium on elementary processes of high-energy chemistry considerable changes had occurred in many directions of investigations. In radiation chemistry attention had noticeably shifted toward elementary processes taking place in the early stages of complex reactions -- reactions of ions, of non-solvated and solvated electrons, and of low and high energy ionizations of the molecules of the substance of the track and the macro- and microheterogeneity of the medium on radiation chemical reactions. An enormous amount of qualitative material has been accumulated in the area of photochemical reactions of excited ions have been studied in the solid phase, and investigations of photochemistry have acquired great importance. Pulsed electrolysis and photolytic have become widespread; the latter by means of powerful lasers and electron beams. (Continued on next page)

51705 54678
100 100 1971

1/2 038 UNCLASSIFIED PROCESSING DATE--09OCT70
 TITLE--EFFECT OF RADIOACTIVE RADIATION ON ELECTRON PARAMAGNETIC
 CHARACTERISTICS OF MACRORADICALS IN GAMMA IRRADIATED POLYCAPROLACTAM -U-
 AUTHOR--(03)--TARANUKHA, U.M., VUNSYATSKIY, V.A., LEBEDEV, YA.S.
 COUNTRY OF INFO--USSR
 SOURCE--DUKL. AKAU. NAUK SSSR 1970, 190(4), 898-901
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, PHYSICS
 TOPIC TAGS--CAPROLACTAM, STRESS RELAXATION, POLYMER, GAMMA RADIATION,
 ACTIVATION ENERGY, PARAMAGNETISM
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1992/2028 STEP NO--UR/0020/70/190/004/0898/0901
 CIRC ACCESSION NO--AT0112983
 UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0112933

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

ABSTRACT. THE RELAXATION PROPERTIES OF MACRO RADICALS IN POLYCAPROLACTAM (L) IRRADIATED WITH 6×10^{19} NEGARADS OF GAMMA RAYS WERE STUDIED. SPECTRAL DIFFUSION MAY HAVE OCCURRED DUE TO RANDOM MOTION OF MACROMOL. CHAINS ABOUT THE SPIN CENTER AT 77 DEGREES, THE MOTION INTENSITY BEING PROPORTIONAL TO THE IRRAD. DOSE. THE ACTIVATION ENERGY OF SPECTRAL DIFFUSION WAS SIMILAR TO 0.9 KCAL-MOLE.

FACILITY: INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PARAMAGNETIC RELAXATION OF MACRORADICALS STABILIZED IN GAMMA
IRRADIATED POLYCAPROLACTAM -U-
AUTHOR--(03)-VONSYATSKIY, V.A., TARANUKHA, O.N., LEBEDEV, V.A.S.
COUNTRY OF INFO--USSR
SOURCE--TEOR. EKSP. KHIM. 1970, 6(2), 235-42
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS
TOPIC TAGS--EPR SPECTRUM, FREE RADICAL, GAMMA RADIATION, POLYMER
STRUCTURE, CAPROLACTAM, PARAMAGNETIC RELAXATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0924 STEP NO--UR/0379/70/006/002/0235/0242
CIRC ACCESSION NO--AP0137952
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PORTIS CASTNER MODEL (A. M. PORTIS, 1953; T. G. CASTNER, 1959) DOES NOT ALWAYS APPEAR ACCEPTABLE FOR THE DESCRIPTION OF SATN. OF EPR SIGNALS OF RADICALS STABILIZED IN THE POLYMER MATRIX IN THE IRRADN. PROCESS. USE OF THE CONCEPT OF CHAOTIC SPECTRAL DIFFUSION ELIMINATES THE DISCREPANCY BETWEEN EKPTL. RESULTS AND THE THEORETICAL MODEL. THE RATE OF SPECTRAL DIFFUSION APPEARS TO BE A PARAMETER WITH THE AID OF WHICH LOW FREQUENCY MOTION IN POLYMER CHAINS IN THE VICINITY OF RADICAL CENTERS MAY BE STUDIED. FACILITY:
INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

LEBEDEVA, Ye. K.

AGE CHARACTERISTICS OF ASSORTMENT OF MINERAL SUBSTANCES FROM A NUTRIENT MEDIUM BY CHLORELLA CELLS

UDC 582.264.43:112-033

Article by Ye. K. Lebedeva, A. A. Antonov, L. B. Galina and S. I. Khokhlovskaya, Komienskaya Biologiya i Meditsina, Kuznetsk, Vol 6, No 1, pp 19-25, 1972, submitted for publication 13 April 1971

3883 38837
12 Apr 1972

Abstract: Age peculiarities of mineral metabolism of Chlorella Spk cells were investigated during intensive cultivation. The results confirm the fact that the age structure of the Chlorella population and nitrogen and phosphorus removal from the medium are correlated. The correlation also finds support in data concerning the fractionation of nitrogen and phosphorus compounds in cells. This is mainly related to the protein form of nitrogen and the acid-soluble fraction of organic phosphates actively involved in the intracellular metabolism. These findings concerning cell requirements varying with respect to the age structure of the Chlorella population should be taken into account when cultivating an intensive Chlorella culture and determining the quantity of minerals to be added.

The method of prolonged continuous cultivation of Chlorella is based on a systematic replenishment of the loss of mineral elements absorbed by the cells in a nutrient medium and transported mechanically with the growing biomass. Such a study is based on a transfer value experimentally established for a heterogeneous population which varies about its mean value. These mean data are used in preparing a single correcting solution which under stable cultivation conditions ensures the limits of variations in the concentrations of mineral nutrient elements in the medium necessary for normal growth. However, in the course of an experiment one can observe deviations in the cell consumption of mineral elements from the nutrient medium from the established mean values. One of the direct causes of these deviations may be a partial asynchronization (a change in the relationship of cells of different physiological age in the population), which is an inevitable result of impairment in cultivation conditions if they exert even an insignificant selective effect on any age stage in the cells.

USSR

UDC 621:396.96

LIKHAREV, V. A., KARTASHKIN, A. S., and LEBEDEV, Ye. K.

"Digital Range-Finding and Moving-Target Selection"

Kiev, Izvestiya VUZov SSSR-Radioelektronika, Vol 13, No 2, 1970, pp 192-204

Abstract: This is a review of the bibliography dealing with digital processing of radar information, which is widely used for detecting signals in background noise and clutter. The subjects considered in this review are digital multi-channel detectors and range-finders, tracking range-finders, Doppler filters, devices for detecting signals of moving targets by using trajectory attributes, and digital devices for intra-period subtraction. Range measurement is discussed first. In analog range measure, information is first accumulated for all distances, and then the delay time is estimated; in digital range measure, an analog-digital transformation is made first, then the delay time is measured. The block diagrams of several range systems are presented and discussed. Similar diagrams for digital range-tracking systems and digital devices for selecting moving targets are also shown and explained. Thirty-five references are listed in the bibliography at the end of this article.

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172 030 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--DIGITAL RANGE FINDING AND MOVING TARGET SELECTION -U-

AUTHOR--(03)-LIKHAREV, V.A., KARTASHKIN, A.S., LEBEDEV, YE.K. L

COUNTRY OF INFO--USSR

SOURCE--KIEV. IZVESTIYA VUZOV SSSR-RADIOELEKTRONIKA, VOL 15, NO 2, 1970,
PP 192-204

DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL DETECTION, RADAR SIGNAL PROCESSING, RADAR RANGE
FINDING, MOVING TARGET INDICATOR, RADAR RANGE TRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0150

STEP NO--UR/0452/70/013/002/0192/0204

CIRC ACCESSION NO--AP0110116

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--A0110116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS IS A REVIEW OF THE BIBLIOGRAPHY DEALING WITH DIGITAL PROCESSING OF RADAR INFORMATION, WHICH IS WIDELY USED FOR DETECTING SIGNALS IN BACKGROUND NOISE AND CLUTTER. THE SUBJECTS CONSIDERED IN THIS REVIEW ARE DIGITAL MULTI CHANNEL DETECTORS AND RANGE FINDERS, TRACKING RANGE FINDERS, DOPPLER FILTERS, DEVICES FOR DETECTING SIGNALS OF MOVING TARGETS BY USING TRAJECTORY ATTRIBUTES, AND DIGITAL DEVICES FOR INTRA PERIOD SUBTRACTION. RANGE MEASUREMENT IS DISCUSSED FIRST. IN ANALOG RANGE MEASURE, INFORMATION IS FIRST ACCUMULATED FOR ALL DISTANCES, AND THEN THE DELAY TIME IS ESTIMATED; IN DIGITAL RANGE MEASURE, AN ANALOG DIGITAL TRANSFORMATION IS MADE FIRST, THEN THE DELAY TIME IS MEASURED. THE BLOCK DIAGRAMS OF SEVERAL RANGE SYSTEMS ARE PRESENTED AND DISCUSSED. SIMILAR DIAGRAMS FOR DIGITAL RANGE TRACKING SYSTEMS AND DIGITAL DEVICES FOR SELECTING MOVING TARGETS ARE ALSO SHOWN AND EXPLAINED.

UNCLASSIFIED

USSR

UDC: 538.221

FILIPPOV, B. N., LEBEDEV, Yu. G.

"The Growth of Magnetic Switching Seeds in Ferromagnetic Single Crystals of Limited Dimensions"

Sverdlovsk, Fizika Metallov i Metallovadeniye, Vol 36, No 5, Nov 73, pp 933-945.

Abstract: The conditions of growth and destruction of centers of magnetic reversal in the form of spheres and ellipsoids of rotation in specimens of limited dimensions in the form of ellipsoids of rotation and parallelepipeds are studied. It was assumed that field H_0 , hindering the development or destruction of seeds, may be either homogeneous through the crystal or heterogeneous. The starting field is determined as a function of the location and dimensions of the remagnetization centers, as well as the dimensions and forms of the specimen. A model is suggested for the growth of spherical seeds in a crystal with heterogeneous H_0 , leading to dependence of the field of sudden change in magnetized state on the magnetizing field, which agrees

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Filippov, B. N., Lebedev, Yu. G., Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 5, Nov 73, pp 933-945.

qualitatively with the experimental dependence. The studies showed that at $H_0 = 0$, a center can never be in equilibrium, and must either disappear or grow. A field $H_0 \neq 0$ may inhibit a change in length or thickness of a center or cause it to freeze completely. There is a certain finite length of a center, decreasing with increasing reverse magnetic field, below which its length can only decrease. The starting fields are found to depend on dimensions and locations of centers.

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" 36 -

USSR

UDC 621.039.524.054.3

GOKHSKTEYN, D. P., VERKHIVKER, G. P., TETEL'BAUM, S. D., LEBEDEV, YU. N.,
GRIVANOVA, S. M.

"Estimating the Thermodynamic Efficiency of Cycles of Thermally Dissociating
Substances"

Dissotsiruyushch. gazy kak teplonoshteli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power
Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 52-60
(from RZh-Elektrotehnika i Energetika, No 5, May 1971, Abstract No 5U187)

Translation: Various types of cycles in dissociating substances are investi-
gated and analyzed. Analysis demonstrated that out of the gas cycles in nitro-
gen tetroxide the most efficient is the gas cycle with subcritical compression.
The economy of the simplest regenerative gas cycles and the gas-liquid
cycles in N_2O_4 is higher than in nondissociating gases and low-boiling working
mediums. It appears prospective to use thermally dissociating working mediums
in multipurpose devices, in particular, in devices for generating electric
power and fresh water. There are 4 illustrations, 2 tables and a 4-entry
bibliography.

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USSR

UDC 621.375.82

BYKOVSKIY, YU. A., LARKIN, A. I., LEBEDEV, YU. S., and MARKILOV, A. A.

"Holographic Broadening of Optical Spectra"

Moscow, V sb. Kvant. elektronika (Quantum Electronics -- collection of works),
"Sov. radio," No 1(13), pp 109-111 (from REZh-Fizika, No 7, 1973, Abstract
No 7D1117)

Translation: The method of optically matched filtrations is used for the recognition and broadening of optical spectra. A method of changing the form of a recognized spectrum is proposed for localizing the correlation signal and broadening the range of the space frequencies fixed in the filter. The experimental results of the recognition of the models of complex spectra are given. Authors' abstract.

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Heat, Combustion, Detonation

USSR

UDC 621.039.587

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

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

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

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

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USSR

UDC 550.42

GLADKIKH, V. S., and ~~LEBEDEV-ZINOV'YEV, A. A.~~ Institute of Mineralogy
Geochemistry and Crystallochemistry of Rare Elements, Moscow

"Uranium and Thorium in Alkaline Olivine-Basalt Series"

Moscow, Geokhimiya, No 11, Nov 71, pp 1315-1323

Abstract: Uranium and thorium distribution has been studied in 158 samples of effusive rocks of alkaline-basalt series (Nainecha-Kotulsk and Kuznetsko-Alatan provinces, zone of grabens in the southern part of the Russian platform). In the alkaline olivine-basalt series the concentration of uranium and thorium, as well as of zirconium and niobium, follows the increase in the alkalinity of the rock, going from basalt to the most alkaline members -- trachyandesite and trachyte. The thorium-uranium ratio diminishes in the same direction. The alkaline olivine-basalt series of platforms and regions with completed folding which are similar in their petrographic composition are characterized by similar concentrations of radioactive elements, in contrast to niobium and zirconium. Small increase in uranium and thorium concentrations may be observed only in series connected to alkaline-ultrabasic blocks and carbonates.

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Acc. No: **AT0048307** Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:
UAP0442

94926t Infrared absorption spectra and microhardness of the most important fluoroaluminates. Povarennykh, A. S.; ~~Iskova, A. P.~~ (USSR). *Dopov. Akad. Nauk Ukr. SSR, Ser. B* 1970, 32(1), 31-4 (Ukrain). Infrared spectra were obtained of 9 fluoroaluminates from Greenland: cryolite (Na_3AlF_6), cryolithionite ($\text{Na}_2\text{Li}_2\text{Al}_2\text{F}_{12}$), chiolite ($\text{Na}_2\text{Al}_2\text{F}_8$), weberite ($\text{Na}_2\text{MgAlF}_7$), prosopite ($\text{CaAl}_2(\text{OH})_2\text{F}_6$), ralsstonite ($\text{Al}_2(\text{OH})_2\text{F}_6 \cdot \text{H}_2\text{O}$), thomsenolite ($\text{NaCaAlF}_6 \cdot \text{H}_2\text{O}$), pachiolite ($\text{NaCa}_2\text{AlF}_6 \cdot \text{H}_2\text{O}$), and gearksutite ($\text{CaAl}(\text{OH})\text{F}_5 \cdot \text{H}_2\text{O}$). Finely ground minerals were mixed with KBr and pressed into pellets. The characteristic absorption bands at $630\text{--}500\text{ cm}^{-1}$ represent valence vibrations and those at 410 cm^{-1} deformation vibrations. The minerals contg. water have addnl. bands at 1660 cm^{-1} . The hydroxyl group gives addnl. peaks between 1200 and 800 cm^{-1} . Cryolithionite has a peak also at 468 cm^{-1} due to the valence vibrations of the Li-F bond. In weberite there are peaks at $520\text{--}470\text{ cm}^{-1}$ due to Mg-F valence vibrations, and in prosopite, thomsenolite and pachiolite peaks due to Ca-F valence vibrations are present. The microhardness of these minerals was in the range $170\text{--}410\text{ kg/mm}^2$. Roman Mykolajewych

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19800007

Public Health, Hygiene and Sanitation

USSR

UDC: 616.74-001.34-091

LEBEDEVA, A. F. and LEVIN, V. N., Institute of Physical Culture imeni P. F. Lesgatt

"Pathomorphological Changes in the Skeletal Muscles of Animals Exposed to Vibration"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, Vol 15, No 11, Nov 71, pp 25-28

Abstract: A morphological study of skeletal muscles was carried out on 30 rats that had been subjected to vibrations with a frequency of 50 cycles and an amplitude of 0.6-0.8 mm 5 hrs per day for 3 mos. Structural changes in the muscles were observed, which were more pronounced in the legs than in the back. Changes involved local separation, rupture, and dystrophy of muscle fibers, complete lysis of some fiber bundles, and degeneration of cell nuclei. Proliferation of connective tissue in damaged sections took place. Similar changes were observed in the muscles of rats subjected to intensive physical stresses for periods up to 1 yr. There was a decrease in the content of DNA in nuclei and of RNA in the cytoplasm as compared with controls. The content of total proteins in the muscles was reduced and there was also a decrease, although slight, in the content of glycogen in them. The degeneration of

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USSR

LEBEDEVA, A. F., and LEVIN, V. N., Gigiyena Truda i Professional'nyye
Zabolevaniya, Vol 15, No 11, Nov 71, pp 25-28

muscle fibers was evidently associated with disruption of innervation,
vascular spasms, and disturbances in acetylcholine metabolism. The work
described was carried out at the Leningrad Sanitary-Hygiene Institute.

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USSR

UDC 616.74-009-02:615-001.34

LEBEDEVA, A. F., and MAROKUSHKIN, L. A., Institute of Physical Culture,
Sanitary Hygiene Medical Institute, Leningrad

"Mechanism of Disruption of Function of the Neuromuscular System during the
Influence of Vibration"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, Jul 70,
pp 15-18

Abstract: The activity of the respiratory enzymes cytochrome oxidase and succinate dehydrogenase in the musculus gastrocnemius and musculus rectus of the dorsum of adult rats was studied before and after vibration. Cholinesterase activity was determined simultaneously in the same muscles on both sides of the body. A qualitative correlation was found between enzymatic activity and applied vibration. Functional as well as biochemical shifts were noted in the neuromuscular system. Structural changes in the muscles may be produced. The vibration appeared to have a reflex effect on the central nervous system, which controls trophic processes in the tissues and organs. Prolonged and intensive vibration can produce a negative trophic reflex and a reduction in the activity of respiratory enzymes in skeletal muscles.

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Acc. Nr: **AP0037226**

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye
Zabolevaniya, 1970, Nr 2, pp 9-12

THE SIGNIFICANCE OF THE BODY POSITION AND STATIC STRESS
IN INDIVIDUAL GROUPS OF SKELETAL MUSCLES IN THE DEVELOPMENT
OF VIBRATION PATHOLOGY

A. F. Lobedeva

Summary

The paper sets forth data on the significance of the body position and static stress in operating hand-held mechanized tools. Physical load on different muscle groups in upper and lower extremities, as well as on the body as a whole is shown to be non-uniform, and sometimes of long duration too. The load on the organism is determined by the specificity of the working position and the magnitude of the muscular effort required for holding fast heavy vibrating tools and for performing work. Working in an awkward posture with static stress necessitates greater physical effort and can be one of the causative factors of vibration pathology. The shape and dimensions of objects to be processed, the design and physical characteristics of vibration tools and other points are of importance here.)

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USS 616-001.34-02:614.85

LEBEDEVA, A. F., Institute of Physical Culture imeni P. F. Lesgafta

"The Role of Body Position and Static Loading on Individual Skeletal Muscle Groups in the Development of Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 2, 1970, pp 9-11

Abstract: A brief description of the different body positions and muscle groups involved in performing various operations with manual vibrating tools is given. The physical load on the muscles of the upper and lower extremities and back varies with the type, design, and weight of the tool, the hardness of the material worked on, and the method of using the tool. Working in an awkward position requires greater effort to control the body and withstand the recoil. Greater demands are placed on the cardiovascular system to supply the muscles with blood and oxygen. Ischemia may result from angiospasm, which intensifies with the duration of vibration. Exercise periods during the day to condition the muscles affected by different body positions are recommended as a means of overcoming fatigue and maintaining fitness.

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USSR

UDC 612.744.015.1.014.45

LEBEDEVA, A. F. and ZHEBROVSKAYA, N. YE., Institute of Physical Culture.
Sanitary Hygiene Medical Institute, Leningrad

"The Effect of Rest on Changes in the Localization of Cholinesterase in the Neuromuscular Synapses of Animals After Exposure to Vibration (Experimental Data)"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, 1972, pp 51-53

Abstract: The effect of the duration of rest on repair after injury due to prolonged vibration was studied by subjecting three groups of male white rats to 5 hours of vibration (at 50 Herz with 0.8 mm amplitude) each day, Sundays and holidays excepted, for 3 months, and then sacrificing the groups at 10, 30 and 80 days after the end of the insult. Sixteen rats were used as controls. Cholinesterase activity in striated spinal and distal extremity muscles were studied by histochemical methods. The changes noted were more marked in the distal muscles. The group given 10 days of rest showed little recovery as compared with previous results. After 30 days of rest the pathological changes were less marked, with some motor end plates appearing normal. Much better recovery was noted after 80 days, but some abnormal end plates were still

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USSR

LEBEDEVA, A. F. and ZHEBROVSKAYA, N. YE., Gigiyena Truda i Professional'nyye Zabolevaniya, No 11, 1972, pp 51-53

present. Thus it was concluded that even prolonged rest (80 days) does not lead to complete recovery after 3 months of exposure.

2/2

USSR

UDC 531.701.2+536.5:658.62.011.56

BEKLEMISHCHEV, A. I., BLOKIN-MECHTALIN, YU. K., BRENNERMAN, V. M., KUZNETSOV, A. A., ~~LEBEDEVA, A. I.~~, SHARIY, K. A.

"Information Measuring System for Automating Deformation and Temperature Measurements in Testing Structures for Strength"

V sb. Ustroystva i elementy sistem avtomatiz. nauch. eksperimentov (Devices and Elements of Automation Systems for Scientific Experiments -- Collection of Works), Novosibirsk, "Nauka", 1970, pp 169-172 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.1-5)

Translation: The system includes a digital measuring device, a device for transducer excitation, a centralized computer system and a device for contact with the object. The basic characteristics of the system are: number of transducers connected 2000 (2000 transducers and 500 thermocouples); range of measuring deformation $\pm 1 \cdot 10^{-5}$ - $\pm 0.5 \cdot 10^{-2}$ relative units; temperature measurement range 0-375°C, 0-750°C and 0-1250°C; the size of the scale of the measuring device is 1019 units; rate of interruption is 30 transducers per second for each of the channels; the reduced maximum error (without considering transducer error) is 1%; length of measurement distance is up to 150 m.

1/1

LEBEDEVA, A. I.

UNCLASSIFIED

biology

Institute of Photosynthesis Research
Department

SECTION 7
Soviet Science - Biological Section

PCS-89
Sept 71

(U) During this quarterly reporting period, four new articles were located from the Institute of Photosynthesis at Juchino. On the basis of these articles, it was possible to identify five new personalities with the

institute. These personalities, the subjects of the articles and the names are given below:

Names, V. K.	Eff. Field / Photo Synthesis	Effect of illumination	1971 (71)
Lebedeva, A. I.	phosphorylation		1971 (71)
Poteyeva, V. S.	plant pigment		1971 (71)
Shvedova, T. A.	chlorophyll		1971 (71)

ИМИ РЕЦИЕНТ

1/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIATION EMULSION POLYMERIZATION OF STYRENE -J-
AUTHOR--(05)-LUKHOVITSKIY, V.I., POLIKARPOV, V.V., LEBEDEV, A.M.,
LAGUCHEVA, R.M., KARPOV, V.L.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 173-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION RATE, RADIATION EFFECT, EMULSION
POLYMERIZATION, STYRENE, GAMMA IRRADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1623 STEP NO--UR/0456/70/004/002/0173/0174
CIRC ACCESSION NO--AP0112617
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS WERE STUDIED OF EMULSION POLYMN. OF STYRENE (I) (K LAURATE (II) WAS USED AS THE EMULSIFIER) IRRADIATED WITH GAMMA RAYS. THE REACTION ACTIVATION ENERGY IS 7.7 KCAL-MOLE. THE FOLLOWING RELATIONS ARE OBEYED $\text{UPSILON IS APPROXIMATELY EQUAL TO } I \text{ PRIME}^{0.5}$ IS APPROXIMATELY EQUAL TO $(C \text{ MINUS } C \text{ SUBM}) \text{ PRIME}^{0.5}$ IS APPROXIMATELY EQUAL TO $\text{EXP}(\text{NEGATIVE } 4600-RT)$ WHERE UPSILON IS THE REACTION RATE, I IS THE IRRADN. INTENSITY, C IS THE CONCN. OF II, AND C SUBM IS THE CRIT. I CONCN. OF THE MICELLE FORMATION. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 628.492

KONDRAT'YEV, S. F., and LEBEDEVA, A. P., Scientific Research and Designing and Technological Institute of Municipal Management, Kiev

"A New Thermal Method for the Decontamination and Treatment of Solid Household Garbage From Cities"

Moscow, Gigiyena i Sanitariya, No 3, Mar 73, pp 58-61

Abstract: A new procedure for the conversion of city household garbage to a fertilizer was developed. After removal from it of ferrous metals by magnetic separation and then of non-ferrous metals manually, the garbage is brought to a particle size ≤ 15 mm by grinding and screening. The presence of non-ferrous metals to be removed is indicated by a high-frequency detector. The garbage in the form of a homogeneous, friable mass is treated for 3 hrs in a rotating drum with air at 120° that is blown through the drum. This results in sterilization and drying. The sterilized, dry mass is ground to a fine powder in a ball mill. The grinding in the ball mill is accompanied by a second magnetic separation to remove fine particles of ferrous metals. The product obtained, which did not require further composting and had the composition organic substances 46-58, total N 0.6-1.2, P 0.3-0.9, K 0.4-1.0%;
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USSR

KONDRAT'YEV, S. F., and LEBEDEVA, A. P., *Gigiyena i Sanitariya*, No 3, Mar 73, pp 58-61

pH 6.0-7.2; and C/N 14-24, was found to be an effective fertilizer. The thermal treatment at 120° brought N and P into forms readily assimilable by plants. S. K. Potemkina, Chem. Engr., and F. M. Konchakovskaya, Chemist, participated in the work on the development of the new method.

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Acc. Nr.

AP0048839

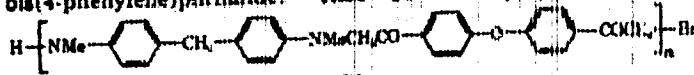
Abstracting Service: CHEMICAL ABST.

5-7

Ref. Code

UR0459

90908r Poly(keto amines), a new type of [heterochain] poly-
 mer. Vinogradova, S. V.; Korshak, V. V.; Lebedev, A. M.; Kul-
 gakova, I. A. (Inst. Elementorg. Soedin., Moscow, USSR). Vy-
 sokomol. Soedin., Ser. A 1970, 12(1), 165-70 (Russ). The conden-
 sation of H_2NRNH_2 (I) with $BrCH_2COR'COCH_2Br$ (II) gave $H-$
 $[NHRNHCH_2COR'COCH_2]_nBr$ (III), intended as intermediates
 in the synthesis of polyindoles. The reaction was first studied on
 model compds.: the condensation of $PhNH_2$ with I (R is $p-C_6H_4$,
 or $4,4'-C_6H_4OC_6H_4$) gave $p-(PhNHCH_2CO)_nC_6H_4$, m. 193-6°, and
 $(4-PhNHCH_2COC_6H_4)_nO$, m. 188-8°, resp. Similarly, $PhCO-$
 CH_2Br was condensed with I (R is $4,4'-C_6H_4C_6H_4$, $4,4'-$
 $C_6H_4OC_6H_4$, or $4,4'-C_6H_4CH_2C_6H_4$) or with $(4-PhNHCH_2CO)-$
 CH_2 to give the corresponding model compds. The condensa-
 tion of I with II gave the best yields (70-90%) in $HO(NM_2)_2$ at
 100°. The following III were obtained (R' is $4,4'-C_6H_4OC_6H_4$, R
 given): $4,4'-C_6H_4C_6H_4$, $4,4'-C_6H_4OC_6H_4$, $(4-C_6H_4)_2CH_2$, 3,3-
 bis(4-phenylene)phthalide. Also IV was prep. Thermo-



(IV)

mech. anal. (change in elongation induced by a 100-g load on
 a 4-mm-diam. sample with temp.) and thermogravimetry showed
 that III are stable to ~500°. CPJR

4

REEL/FRAME 19800606

LD 7

LEBEDEVA, A.V.

Microelectronics

MICROELECTRONICS

JPRS 57333
25 October 1972

Excerpts from Russian-language book edited by P. V. Lukhin:
Microelectronics, No 5, 1972, Sovetskoye Radio Publishing House,
Moscow, 321521, 196, 6-191, 5.

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[X - USSR - F]

the dimensions of the active components, the influence of the dimensions being more significant as the required power of the circuit is less. The authors study the influence of the capacitance of the emitter junction of a microemitter transistor on the speed of response of the TTL of the circuit.

The article contains 6 figures, 2 tables, and 6 bibliographic references.

UDC 621.376.6-101.5

Basic ways of increasing the quality of logic integrated microcircuits. Yanushovskiy, S.G. In the Collection Microelektronika, edited by T.V. Lukin, No 5, p 110, Sovetskoye Radio Publishing House, 1972.

This article defines the functional characteristics between the product PT and other physical parameters of space, bounded by an arbitrary surface. On the basis of the obtained dependences the article discusses ways of increasing the speed of response and decreasing the scattering power of the integrated microcircuits.

The article contains 2 bibliographic references.

UDC 621.387.71

Use of Nonlinear Programming for Optimal Computation of the Geometric Dimensions of the Regions of Transistors of Integrated Circuits. Lebedev, S.G., Baidov, B.V., Lebedev, A.V. and Rudenko, G.A. In the collection Microelektronika, edited by T.V. Lukin, No 5, p 118, Sovetskoye Radio Publishing House, 1972.

A method is suggested for solving problems of synthesizing active components based on the use of nonlinear programming equipment. The article gives a block-diagram of the program algorithm and a specific example of the optimal computation of the geometric dimensions of the regions of a transistor for an integrated semiconductor circuit.

The article contains 4 figures, 1 table, and 8 bibliographic references.

UDC 621.376.6-101.5

Structure of Micropower Integrated Internal Memories on Uniform Subsystems on Supplementing MPP Transistors. Gorderov, B.K. et al. In the Collection Microelektronika, edited by T.V. Lukin, No 5, p 128, Sovetskoye Radio Publishing House, 1972.

USSR

UDC 661.143(088.8)

SOROKIN, O. O. M., BLANK, V. A., and LEBEDEVVA, G. A.

"A Method for the Production of Fluorinated Photocathodes"

USSR Author's Certificate No 357621, filed 19 Jun 70, published 25 Jan 73
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19L149 P)

Translation: To lower the long wave sensitivity, the metal layer (alkaline or alkaline-earth) or the fluoride of one of these elements deposited on a base together with Fv are fluorinated to the stoichiometric point with fluorine formed by decomposition of an F-containing compound. The vacuum space containing the base with deposited layer of metal or fluoride is evacuated to a pressure of 10^{-5} mm using a nonoil pump. The base is heated to $300 \pm 10^\circ$, the pump is sealed off and the container with XeF_2 is heated to about 50° , resulting in the formation of a 2-4 mm pressure of XeF_2 vapors in the system.

Decomposition (pyrolysis) of XeF_2 occurs in the proximity of upper Fv of the base and the atomic fluorine reacts with its layer compensating for its deficiency of fluorine. Xenon being liberated during the pyrolysis is inert and does not react with the layer.

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USSR

UDC 616.34-001.29-092

LEBEDEVA, G. A.

"Development of the Pathological Process in the Gastrointestinal Tract, as Related to the Enteric Form of Acute Radiation Sickness"

Moscow, Arkhiv Patologii, Vol 33, No 11, 1971, pp 12-18

Abstract: Experiments were conducted on 107 rats and 58 mice exposed to whole body or local x-ray irradiation in doses of 1,000, 3000, and 13,000 r. in order to trace the pathological process of acute enteric radiation sickness in the gastrointestinal tract. Lesions developed in the following order: in the proximal part of the small intestine, its distal part, the large intestine, pylorus, and fundus and body of the stomach. The most significant changes were observed in the mucosal epithelium of the proximal small intestine. Initial changes occurred in the epithelial cells: mitosis ceased and cells degenerated. Changes in the mucous membrane were determined by the extent of radiation damage to surviving epithelial cells. These cells moved from the crypts to the villi, forming unusually large, multinuclear types, and gradually sloughed off into the lumen of the intestine, thereby denuding the mucosal stroma, which resulted in death. Further investigation was made of the giant epithelial cells, which preserve the epithelium and have a longer life span (to 5 days) than in nonirradiated animals (3 days). They

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USSR

LEBEDEVA, G. A., Arkhiv Patologii, Vol 33, No 11, 1971, pp 12-18

were found to be inadequate in some aspects of their digestive and absorptive functions.

Other changes in structures in the intestinal wall were also noted. Wandering cells in the mucosal stroma disintegrate. Neutrophils and lymphoid and histiocytic elements increase around the foci of disintegration of crypt epithelium. Vessels in the capillary-venous network swell; changes indicating irritation occur in nerve elements. Following whole body irradiation, mass destruction of lymphocytes occurs in lymphoid structures, as well as depletion of follicles with stripping of the reticular stroma. Following local irradiation, after lymphocytes disintegrate, the centers of follicles rapidly fill up with mature cells in Peyer's patches apparently coming from nonirradiated lymphoid structures. Morphological changes in other parts of the gastrointestinal tract are analogous to those in the small intestine, although less significant. It was concluded that injury to the epithelium of the small intestine, depending on the rate of cell division and renewal of epithelium, determines the course and result of sickness. One of the basic causes of the Enteric syndrome is radiation damage to the intestinal epithelium. Irritation of intestinal mucosa by excessive fat in the intestine due to increased excretion and impaired reabsorption is of possible significance.

2/2

- 28 -

USSR

UDC 617-001.28-036.12-092.9+085.849.1.015.25-07[:
616.36+616.61]07

MIKHAYLOVICH, S. M., OVDIYENKO, N. I., SEDOV, V. V., LEBEDEVA, G. A., and PАРFENOV,
Yu. D.

"The Effect of Oxathiol on the Liver and Kidneys in Chronic Radiation Sickness
Induced by the Injection of Polonium²¹⁰"

Moscow, Meditsinskaya Radiologiya, No 4, 1970, pp 43-51

Abstract: A single subcutaneous injection of dogs with 2.5 microcurie/kg of Po²¹⁰ produced chronic radiation sickness accompanied by impairment of liver and especially kidney function, causing death of animals in 9 months. In experimental dogs, daily doses of 50 and 25 mg/kg of oxathiol for a month not only mitigated the liver and kidney disorders, but enabled the animals to survive for the entire 7-year observation period. Oxathiol treatments also reduced the size of the absorbed dose of Po²¹⁰ in the organs. Oxathiol is a complexing agent that accelerates the excretion of polonium from the body by forming stable water-soluble complexes. The free SH groups contained in oxathiol help to restore the radiation-impaired balance of SH groups in the enzyme systems.

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UDC 617-001.28-036.11-039:616.74

USSR

LEBEDEVA, G. A., Institute of Biophysics, Ministry of Health USSR, Moscow

"Intestinal Form of Acute Radiation Sickness Affected by Various Types of Ionizing Radiation"

Moscow, Meditsinskaya Radiologiya, Vol 17, No 6, Jun 72, pp 67-72

Abstract: Ten dogs, 67 white rats, and 40 mice were subjected to external and internal radiation to study development of intestinal acute radiation sickness in response to different radiation sources. General external x-ray treatment (1,000-3,000 r) generates lesions in the small intestine mucosa in 3-3½ days, while localized treatment delays lesions to 4-5 days. Pathological severity increases in the entire gastrointestinal tract caudocranially. Mixed gamma-neutron radiation produces more severe reactions (lesions arise in 2-3 days, accompanied by massive hemorrhaging and mucosal necrosis), but the pattern of severity is as above. With intravenous injection of alpha-emitting Po^{210} (0.1 microcurie/gm), necrotic processes take longer (5 days for lesion appearance), but again the response is more severe in the small than in the large intestine. Beta-emitting Ce^{144} introduced perorally into the stomach (12-18 microcurie/gm) produced an opposite pattern of severity, with ulceration arising in 2 days in the large intestine and lesions of small intestine mucosa appearing in 4-5 days. Thus this disease occurs in response to various

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USSR

LEBEDEVA, G. A., Meditsinskaya Radiologiya, Vol 17, No 6, Jun 72, pp 67-72

types of radiation, including that from ingested isotopes although severity of response varies with radiation type. Lesions of the small intestine mucosa always occur, and the intestinal syndrome will appear even if just the distal portion of the small intestine alone suffers severe damage.

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USSR

UDC 581.143 + 547.379.52

PRILEZHAYEVA, YE. N., LUKIN, V. V., SHEGOTSKIY, V. I., NOVITSKAYA, N. N., LABA, V. I., SHEMONINA, L. I., PETUNOVA, A. A., and LEDEDEVA, G. E. Institute of Organic Chemistry imeni N. D. Zelinskiiy, Academy of Sciences USSR, Moscow

"A New Group of Herbicidal Compounds -- Alkylvinyl Sulfones"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

Abstract: A systematic study was made of the relation between herbicidal activity and structure for vinyl sulfones and substances similar to them under hothouse conditions on potted plants. It was found that the display of appreciable herbicidal action in these series is due to the presence of a double bond adjoining the sulfonyl group and possessing strong electrophilicity. The highest herbicidal activity was found in vinyl sulfones with normal primary radicals containing 8-10 atoms. These compounds, to which the authors have given the names Alvisones 8, 9, 10 respectively, showed no activity of action in hothouse experiments. Some properties of Alvisones 8 and 10, obtained

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USSR

PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

from chromatographically pure primary n-octyl and n-decyl mercaptans, were compared with the properties of Alvisone-K, obtained from mercaptan concentrate extracted from polysulfide petroleum of the Isaimbay type, as well as Alvisone 8-10 obtained from a mixture of synthetic alcohols C₈-C₁₀ (supplied by YU. B. KAGAN and S. M. LOKTEV). Alvisone-K was found to be only slightly inferior to Alvisones 8 and 8-10 in herbicidal activity. Data were obtained on the dosage of "Alvisone" herbicides under field conditions, based on three-year field plot tests conducted at the Pushkin base of the All-Union Institute of Plant Protection (Leningradskaya Oblast), as well as by the Chair of Agriculture of the Soil Biology Faculty of Moscow University (Moskovskaya Oblast).

The results indicate that Alvisone-K possesses a number of properties (e. g., low toxicity for warm-blooded animals, stability under storage) which make it promising for the control of annual di-

2/3

USSR

PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

cotyledonous weeds in carrot plantings. Alvisone can be used as a contact herbicide as a supplement to soil preparations (of the propazine type etc.). The most convenient way of preparing these α, β -unsaturated sulfones is three-stage synthesis from mercaptans, either individual ones or mixtures thereof.

The authors thank T. YE. PIVOVAROVA, V. I. DRONOV, V. KH. SYUNDYUKOVA, T. S. PAPKO for taking part in the synthetic portion of the work, P. V. SAEUROVA for taking part in the hothouse tests, A. V. ZAKORDONETS and YE. V. ARZAMASTSEV for determining the toxicity for warm-blooded animals, and Professor R. D. BOLENTSIY and V. S. BURYI for their interest in the study.

3/3

Semiconductor Technology

UDC 530.75. -- 621.315.592:547.665

USSR

LEBEDEVA, G. I., and FREYMANIS, YA. F., Institute of Organic Syn-
~~thesis, Academy~~ of Sciences Latvian SSR, Riga

"Entropy of Fusion of Some Organic Semiconductors of the Indene
Series"

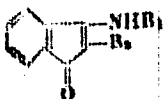
Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 11, Nov 70, pp
2762-2765

Abstract: In connection with research being done on physico-chemical properties of organic semiconductors of the indene series, the authors studied some thermodynamic characteristics of these substances, particularly the entropy of fusion. The article compares the entropy of fusion determined from experimental data with the analogous value calculated by the additive group method on the basis of the homomorphism principle. The entropies of fusion were determined for the following indene compounds from their solubility in benzene:

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USSR

LEBEDEVA, G. I., and FREYMANIS, YA. F., Zhurnal Fizicheskoy
Khimii, Vol 44, No 11, Nov 70, pp 2762-2765



I - $R_1 = H$, II - $R_1 = C_6H_5$, III - $R_1 = CH_3$, Benzoyl a) $R_2 = C_6H_5$, b) $R_2 = C_6H_5$, c) $R_2 = CH_3$, d) $R_2 = nC_4H_9$, e) $R_2 = nCH_2(C_6H_5)$.

I) $R_1 = H$, II) $R_1 = C_6H_5$, III) $R_1 = CH_3$. Everywhere a) $R_2 = C_6H_5$, b) $R_2 = \alpha-C_{10}H_7$, c) $R_2 = CH_3$, d) $R_2 = pClC_6H_4$, e) $R_2 = pCH_3OC_6H_4$. Satisfactory agreement was found between the additive and experimental values for compounds Ia, Ib, Id, Ia, IIa, IIc. The experimental value was higher than the additive value for Ic, IIe, IIIa, possibly due to the presence of phase transitions directly preceding fusion. A lower value was found for

2/3

USSR

LEBEDEVA, G. I., and FREYMANIS, YA. F., Zhurnal Fizicheskoy
Khimii, Vol 44, No 11, Nov 70, pp 2762-2765

ΔS^{exp} than for ΔS^{add} in the case of IIb, possibly due to
the effect of steric factors on the free rotation of the mole-
cule.

The authors thank B. P. MATSEYEVSKIY for discussing the
work.

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SPECTROSCOPIC STUDY OF THE INTERMOLECULAR HYDROGEN BONDING OF
ARINGINDENONES IN THE SOLID PHASE AND IN SOLUTIONS "U"
AUTHOR--LEBEDEVA, G.I.
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 26-32
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN BONDING, AMINE, KETONE, SOLVENT ACTION, SPECTROSCOPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0748 STEP NO--UR/0197/70/000/002/0026/0032
CIRC ACCESSION NO--AP0124418
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--23JCT70

CIRC ACCESSION NO--AP0124418

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A STUDY ON INTRAMOL. H BONDING OF AMINOINDENONES IN SOLIDS AND IN SOLNS., THE HEAT EFFECTS OF H BOND FORMATION ARE COMPARED WITH THE IR FREQUENCY SHIFTS OF THE AMINO GROUP STRETCHING VIBRATION ($\Delta \nu$). STUDIED WERE 2 SUBSTITUTED AMINO (I) AND 1, (PHENYLAMINO)INDENONES (II) (SUBSTITUENTS: A, PHI B, ALPHA, NAPHTHYL; C, ME; D, P, CHLOROPHENYL; E, P, ANISYL). THE IR BANDS DUE TO THE ν SUBNH VALUES MEASURED IN SOLVENTS DIFFERING IN POLARITY ARE COMPARED WITH THE CORRESPONDING VALUES IN THE SOLIDS. IN I, ASSOCN. OCCURS IN THE MORE POLAR SOLVENTS. ASSOCNS. OF VARIOUS TYPES OCCUR IN II IN SOLIDS AND IN HCONME SUB2 SOLNS. IN ME SUB2 CD, ASSOCN. IN IIA, IID, BUT NOT IN IIB, IIC WAS OBSD. II FORM STRONGER ASSOCNS. THAN I IN SOLIDS AND INTERACT MORE STRONGLY IN SOLVENTS, EXCEPT FOR IA IIA. THE ν VALUES MEASURED ARE CLOSE TO THOSE FROM SPECTROSCOPIC DATA. A CLOSE CORRELATION BETWEEN THE $\Delta \nu$ AND ΔH VALUES IS OBSD. ONLY FOR I IN HCONME SUB2 SOLNS., AND IN ME SUB2 CD THE CORRELATION IS ONLY QUAL.

FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

USSR

UDC 621.785.532:669.15'295-194

LAKHTIN, YU. M., and LEBEDEVA, G. V., Moscow Automobile and Road Institute

"Nitriding of Titanium-Containing Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No. 2, 1971, pp 15-19

Abstract: The kinetics of nitriding of steels with titanium is studied for steels containing C 0.26-0.53%; Mn 0.28-0.41%; Si 0.28-0.42%; Ti 0.64-5.5%; Ti/C 1.37-21.0%. Nitriding of these alloys in a medium of ammonia causes the formation of diffusion layers, the properties of which depend on the titanium/carbon ratio. The best nitriding results were produced with steels having Ti/C between 6.5 and 9.5. With Ti/C over 9.5, brittle layers are produced due to separation of a high-nitrogen phase on the grain boundaries and slipping planes, as well as hydrogen diffusion. The dependence of layer depth on temperature is exponential, on time -- parabolic.

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USSR

LEEDEVA, G. V. L

"Effect of Titanium on Nitriding"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1970, pp 77-79

Abstract: This article contains the results of an experiment performed on ferrite iron alloyed with titanium having the following composition: 0.04% C; 0.11% Si; 0.06% Mn; 0.019% S; 0.017% P, a Ti/C ratio from 0 to 85; a nitriding temperature of 460-510, 550, 600, and 660°C, and a degree of ammonia dissociation of 20-24%, 31-42%, 55-56%, 71-82%, and 92%. It is noted that variations of the degree of dissociation from 24 to 74% has no effect on the properties of the nitrided layer. From the data it is obvious that the hardness of the ferrite increases with an increase in the amount of titanium. Figures are presented showing the effect of the Ti/C ratio on the hardness of the ferrite, the effect of titanium on the hardness and depth of the nitrided layer, the effect of the carbon content and nitriding time (650°C) on hardness and depth of the hardened layer, the hardness and depth of the nitrided layer of steels with a base composition of 0.45 C and 3% Ti alloyed with chromium, the effect of the heating temperature on the hardness of the nitrided layer and the effect of molybdenum on the hardness and depth of the nitrided layer of P-4 alloy (0.2% C; 2.0% Cr; 3.0% Ti) and H alloy (0.2% C; 2.0%

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USSR

LEBEDEVA, G. V., *Metallovedeniye i Termicheskaya Obrabotka Metallov*, No 2, 1970, pp 77-79

Cr; 3.0% Ti; 0.5% Mo). It is concluded that nitriding of steels alloyed with titanium at 600-650°C permits high surface hardness (HV 1200-1400) to be obtained in 3-6 hours with a depth of layer of 0.4-0.5 mm. For example, when nitriding steel containing 5% Ti at a nitriding temperature of 650°C in 1.8 hours it is possible to obtain a layer 0.95 mm deep and a surface hardness of HV 900. Means of lowering the hardness gradient on the work-hardened and unwork-hardened layers when nitriding Ti-Cr steels are also discussed.

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PROCESSING DATE--23OCT7C

1/2 013

UNCLASSIFIED

TITLE--EFFECT OF TITANIUM ON NITRIDING -U-

AUTHOR--LEBEDEVA, G.V.

COUNTRY OF INFO--USSR

SOURCE--METALLOVEDENIE I TERMICHESKAIA OBRABOTKA METALLOY, NO. 2, 1970, P.

77-79
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--NITRIDATION, CASE HARDENING, TITANIUM CONTAINING STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1557

STEP NO--UR/0219/70/000/002/0077/0079

CIRC ACCESSION NO--AP0120336

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120336

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF TITANIUM ON THE NITRIDING OF ARMC0 IRON AND SEVERAL STEELS WITH DIFFERENT CONTENTS OF TITANIUM. IT IS FOUND THAT NITRIDING OF TITANIUM CONTAININ STEELS FOR 3 TO 6 HR AT TEMPERATURES RANGING FROM 600 TO 650 DEG C, MAKES IT POSSIBLE TO OBTAIN HIGH SURFACE HARDNESS UP TO 1400 DPH. THE NITRIDED LAYER IS FROM 0.4 TO 0.5 MM THICK.

UNCLASSIFIED

USSR

UDC 577.17

LEBEDEVA, K. V., and YUDOVSKAYA, T. K.

"Juvenile Hormone Analogues and the Possibilities of Their Utilization in Plant Protection

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 18, No 5, 1973, pp 518-523

Abstract: A review with 113 references covering the compounds with pronounced juvenile hormone activity of the insects. The active compounds are subdivided in seven structural groups; biological activities of each group are reported. Some structure-activity generalizations have been made: the chain length in acyclic terpenoids should be at least 13-16 carbon atoms long; when an aromatic ring is present, the side chain should contain at least 8 carbon atoms. Changes at the terminal carbon atoms of the molecules have the most pronounced effect on the activity; as a rule the 2,3-double bond present in these compounds should be trans-oriented.

1/1

- 20 -

USSR

UDC 632.937

LEBEDEVA, K. V.

"Insect Pheromones and Their Potential Use in Control of Plant Pests"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva Imeni D. I. Mendeleev, Vol 18, No 5, 1973, pp 507-517

Abstract: A review with 182 references covering the period of 1968-1972. It has been shown that the use of pheromones makes it possible to lower 1000 fold the dosage of insecticides used, leading to disorientation of the insects by creating a saturated atmosphere of pheromones or their inhibitors. The theory of chemoreception, methods of purification and identification of pheromones has been reviewed. In the past five years 14 pheromones of the Lepidoptera types have been isolated and identified as $C_{12}-C_{16}$ unsaturated alcohols or their acetals. The pheromone of common house fly is an unsaturated C_{23} hydrocarbon. A complex relationship has been noted in the Coleoptera insects between their particular pheromones and tree-host substances. Active compounds have been discovered on the basis of bioassays.

1/1

USSR

UDC 632.951+612.018

LEBEDEVA, K. V., and YUDOVSKAYA, T. K., All-Union Scientific Research
~~Institute of Chemical Means for Plant Protection~~

"The Search for Insecticides With Juvenile Hormone Activity"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 5, 1971, pp 31-33

Abstract: Information given in the non-USSR literature on the constitution, mode of action, and synthesis of compounds with juvenile hormone activity is reviewed from the standpoint of prospects of application of these compounds in the control of insect pests (62 references).

1/1

USSR

UDC 615.786-092.259:612.746

KHAYDAROV, K. Kh., LEBEDEVA, L. D., GLAZUNOVA, Ye. M., and GLEBOVA, N. V.,
Institute of Chemistry, Academy of Sciences Tadzhik SSR; Tadzhik State
Medical Institute imeni Abuali ibn-Sino

"Physiological Effect of Carbamates of Dihydropyranol Derivatives"

Dushanbe, Izvestiya Akademii Nauk Tadzhikskoy SSR, No 4(45), 1971, pp 41-46

Abstract: The effect of 2,5,6,6-tetramethyl-2-ethyl-dihydro-5-pyranol (K₃) and 2,6,5,6-tetramethyl-6-ethyl-dihydro-5-pyranol (K₆) on the central nervous system of mice was studied. In both of these compounds the methyl was substituted for ethyl at the 2d and 6th positions. A transfer of the ethyl radical from the 2d to 6th position increased to some extent the toxicity of these compounds, regardless of the method of administration. At the same time, it improved some of their effects on the central nervous system, such as soporific and muscle-relaxation properties. An intraperitoneal dose of 200 mg K₃/kg did not cause any visible effect on animals, but a dose of 300 mg/kg produced a very strong depressing effect, and 400 mg/kg made all mice lie on their sides in 4-5 min. In the case of K₆, a strong depression was produced by 250 mg/kg. A large subcutaneous doses of K₃ and K₆ (900, 1000, 1100, 1200, 1300, 1400 mg/kg) produced depression in 60 min. Doses of 700, 800, 900, 1000, 1200 1/2

USSR

KHAYDAROV, K. Kh., et al., Izvestiya Akademii Nauk Tadzhikskoy SSR, No 4(45), 1971, pp 41-46

mg K₃ and K₆/kg administered orally produced a sedative effect in 15 min., and all animals were lying down in 45 min. A combination of caffeine and phenamine with 300 mg K₃ or K₆/kg removed partially and doses of 500 mg/kg completely removed the stimulation produced by caffeine and phenamine. Animals slept for 30, 62, 87, and 150 min. when given 400, 500, 550, and 600 mg K₃/kg, respectively. In the case of 300 and 350 mg K₆/kg, the sleep was prolonged to 300 and 350 min., respectively. The effect of these compounds disappeared completely in 18-24 hr. All mice perished in sleep when injected with 650-700 mg K₃/kg, or 500-600 mg K₆/kg. The sleep produced by hexenal (60 mg/kg given intravenously) was prolonged 2.5-14 times when animals were preliminarily injected with 10, 25, 50, or 100 mg K₃ and K₆. A displacement of the ethyl radical from the 2d to 6th position did not improve much the anticonvulsion properties of these compounds. The data obtained indicate that both compounds act on the central nervous system, although the cholinolytic properties cannot be ascribed to them.

2/2

USSR

UDC 632.95

YUKHTIN, N. N., MOLCHANOV, A. V., KELEKIBAYEVA, YE. A., BAZANIKVA, S. S.,
LEBEDEVA, L. I., GRISHINA, YE. A., and PLESNYAKOVA, S. I.

"Propanid -- A Highly Effective Herbicide for Weed Control in Rice Paddies"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 156-163 (from KhZh-KhKhLiya, No 13, 10 Jul 72, Abstract No 13N514 by O. A. Korotkova)

Translation: AS a result of a study of propanid yield dependence on the solvent, reactant molar ratios and crystallization conditions, it is suggested that propanid be obtained by acylation of 3,4-Cl₂C₆H₃NH₂ Et-cos H [sic] in a petroleum solvent medium at a 3,4-Cl₂C₆H₃NH₂ and solvent ratio of 1:0.5.

The reaction is conducted for 12-15 hours with stirring and at 140-160°, distilling the aqueous azeotrope at 90-95° at the beginning of the process, and 135° at the end. The unreacted starting materials are recycled. The resultant propanid has a purity of 98.5-99.5 percent, melting point 89-91°, yield 83-98 percent.

1/1

- 60 -

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF MOLYBDENUM IN HYDROMETALLURGY PRODUCTS BY
TITRATION WITH VANADATE -U-
AUTHOR-(03)-GOLUBTSOVA, Z.G., LEBEDEVA, L.I., YAKOVLEVA, N.F.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 150-1
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--HYDROMETALLURGY, MOLYBDENUM, VANADATE, TITRATION
CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1053 STEP NO--UR/0032/70/036/002/0150/0151
CIRC ACCESSION NO--AP0123046

2/2 017

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0123046

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOLYBDATE IS REDUCED WITH N SUB2 H SUB4 AND TITRATED WITH 0.01N NH SUB4 VO SUB3 IN MEDIUM OF H SUB3 PO SUB4 WITH FERROIN INDICATOR. DISSOLVE 0.25 G MO-W CONC. BY TREATING IT WITH 20 ML HOT HNO SUB3 AND ADDING LATER 10 ML HCL AND 4 ML H SUB2 SO SUB4. HEAT UNTIL H SUB2 SO SUB4 FUMES ARE PRODUCED, DIL. WITH 100 ML H SUB2 O, NEUTRALIZE WHEN BOILING WITH NH SUB4 OH AND ADD 10 ML IN EXCESS, LET THE HYDROXIDES COAGULATE AT ELEVATED TEMP., COOL, AND FILTER. DIL. THE FILTRATE TO 250 ML. NEUTRALIZE A 25 ML ALIQUOT WITH 7N H SUB2 SO SUB4, ADD 50 ML 1:4 HCL AND 20 MG N SUB2 H SUB4.HCL, BOIL 5 MIN, ADD 13 ML H SUB2 SO SUB4 AND 5 ML H SUB3 PO SUB4, COOL, AND TITRATE WITH 0.01N NH SUB4 VO SUB3 BY USING FERROIN INDICATOR. THE BLANK CORRECTION IS USUALLY 0.1-0.2 ML. FOR SAMPLES WITH 20-60PERCENT MO AND 1-17PERCENT WO SUB3, THE STD. DEVIATIONS WERE 0.05-0.25PERCENT. FACILITY: Leningrad. Gos. Univ., Leningrad, USSR.

LEBEDEVA, L. N.

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24

TECHNICAL TRANSLATION

REF ID: A66722
27 AUG 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UKRAINIAN CONFERENCE, KIEV,
SEPTEMBER 1968

RUSSIAN TITLE: ПРОБЛЕМЫ ПЕРЕДАЧИ ИНФОРМАЦИИ ЛАЗЕРНЫМИ ИЗЛУЧЕНИЯМИ

AUTHOR: I. A. DERJUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.C. SHTETENBERG

Translated for FSTC by ACS1

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- File 741 -

USSR

UDC 597.0/5-15

LEBEDEVA, L. P., Institute of Oceanology imeni P. P. Shirshov, Academy of Sciences, USSR

"The Scattering of Sound by Fishes"

Moscow, Voprosy Ikhtiologii, Vol 12, No 1, 1972, pp 168-173

Abstract: It is known at present that the scattering of sound in the ocean is linked mainly to fishes having gas-filled swim bladders. Scattering on fish is a complex effect composed of scattering of the sound on scale-covered tissues on the skeleton, and on the gas bladder. These effects are considered separately and are compared for fishes considerably shorter than an acoustic wave. The calculation is conducted by a method previously described by the author. Resonance scattering at frequencies of about 1 kHz is several hundred thousand times greater than scattering on the scale coating. In its turn, scattering on the scale coating is several hundred times greater than scattering on the skeleton. This indicates that small bladderless fishes cannot effectively disperse sound. However at low frequencies, at several hundred Hz, scattering on scale-covered fishes several dozen centimeters long can effectively approach scattering on fishes with gas-filled swim bladders; their scattering cross sections will have a value of the order 1/2

Graphite

USSR

UDC 666.764.4:669.716:621.73

KARLIT, A. K., SOKOLOV, A. N., LEBEDEVA, M. F., ZEGZHDA, V. P., Deceased,
All-Union Institute of Refractories, SIMONOV, V. N., Leningrad Plant for
Processing of Nonferrous Metals, ANDREYEV, V. F., PARTIN, I. A.,
CHEREPOK, G. V., Kuybyshev Metallurgical Plant imeni V. I. Lenin

"Graphite-Containing Products for Casting of Aluminum Alloys"

Ogneupory, No. 2, 1971, pp 15-15

Abstract: A composition and method of manufacture of graphite-containing refractory products of low heat conductivity for casting of aluminum and aluminum-based alloys have been developed. The reduction in heat conductivity is achieved by introducing asbestos to the mass and using low-temperature (700°C) roasting. The products have shown satisfactory strength in service.

171

Acc. Nr: AP0054286

Ref. Code: UR 0358

PRIMARY SOURCE: Meditsinskaya Parazitologiya i Parazitarnyye
Bolezni, 1970, Vol 39, Nr 1, pp 28-31

Gladkikh, V. F., Lebedeva, M. N.:
Investigation of Absorption of Phen-
sal Administered Orally to White Rats

The content of phenasale in the blood serum of white rats was determined by a chemical method based on reaction of phenasale with ethanolamine. The drug was shown to be well adsorbed from the gastrointestinal tract and its concentration to be dependent on the amount of the dose administered. A comparatively rapid decline of the drug concentration in the blood was demonstrated.

40

REEL/FRAME
19831424

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1/2 019 UNCLASSIFIED PROCESSING DATE--09OCT70
 TITLE--ON PHARMACOLOGY OF THE DRUG CHLOXYL (1.4 BIS TRICHLORMETHYLBENZYL).
 COMMUNICATION IV THE DYNAMICS OF CHLOXYL CONTENT IN THE BLOOD SERUM,
 AUTHOR--(02)--LEBEDEVA, M.N., KRYLOVA, A.S.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENI, 1970, VOL
 39, NR 2, PP 195-201
 DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SELECTIVE DRUG EFFECT, GASTROINTESTINAL DRUG, PARASITE,
 CHLORINATED ORGANIC COMPOUND, WHITE RAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--1990/1432

STEP NO--UR/0358/70/039/002/0195/0201

CIRC ACCESSION NO--AP0109492

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME ASPECTS OF ABSORPTION, ACCUMULATION AND ELIMINATION OF AN ANTHELMINTIC DRUG, CHLOXYL (1,4 BIS TRICHLORMETHYLBENZOL) ADMINISTERED IN AN AQUEOUS SUSPENSION OR WITH FAT CONTAINING PRODUCTS WERE STUDIED. CHLOXYL WAS DETERMINED IN BIOLOGICAL MATERIAL BY A CHEMICAL METHOD BASED ON FUJIWARA REACTION (1914). SOME GENERAL FEATURES OF THE BEHAVIOR OF THE DRUG IN THE ORGANISM WERE ESTABLISHED: RAPID ADSORPTION FROM THE GASTROINTESTINAL TRACT, A RELATIVELY LOW CONTENT IN THE BLOOD SERUM AND LONG PERSISTENCE IN THE VISCERA BOTH AFTER SINGLE AND REPEATED ADMINISTRATIONS. WHEN THE DRUG WAS DISCONTINUED, ITS CONTENT WAS OBSERVED TO DECLINE RAPIDLY. FAT CONTAINING PRODUCTS ENHANCED ABSORPTION OF CHLOXYL AND INCREASED ITS CONTENT IN THE VISCERA. THE DRUG WAS SHOWN TO BE ELIMINATED FROM THE ORGANISM MAINLY THROUGH THE BILE WITH FECES. FACILITY:
LABORATORIYA FARMAKOLOGII OTDELA MEDITSINSKOY GEL'NINTOL. I KLINICHESKIY OTDEL INSTITUTA MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM. YE. I. MARTINOVSKOGO MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

UNCLASSIFIED

172 024

TITLE--CHANGE IN THE STRUCTURE OF THE BOUNDARY OF BINARY GOLD PALLADIUM FILMS DURING DIFFUSION ANNEALING -U-

AUTHOR--(02)-BOYKO, B.T., LEBEDEVA, M.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 19(3), 603-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ANNEALING, GOLD ALLOY, PALLADIUM ALLOY, SURFACE FILM, METAL FILM, METAL DIFFUSION, SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0934

CIRC ACCESSION NO--AP0121536

UNCLASSIFIED

PROCESSING DATE--30OCT70

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