USSR

DEBOV, S., Trud, 6 Oct 72, p 4

might be cured if a missing gene could be artificially provided. Such an experiment using a harmless carrier virus has been conducted successfully under laboratory conditions by American scientists. It is tempting to think that diabetes and gout might be treated similarly so that insulin and the uric acid-decomposing enzyme respectively would be produced. Connected with this is a very interesting study in which a simple ribonucleic acid, itself not infectious, stimulates the production of protective protein against viruses and, according to a series of data, tumors. These ribonucleic acid and other experiments, being conducted in the Soviet Union as well as abroad, show the intriguing trends in molecular biology.

2/2

USSR

UDC 615.281.8:547.963.32

ATANASOVA, Yu. G., PUSHKARSKAYA, N. L., GALEGOV, G. A., and DEBOV, S. S.,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Sciences USSR,
and Chair of Biochemistry, First Moscow Institute imeni I. M. Sechenov

"Antiviral and Interferogenic Action of Complexes of Polyadenylic and
Polyuridylic Acids"

Abstract: Sterile solutions of polyadenylic and polyuridylic acids (1:1) at
concentrations of 27 to 300 µg/ml inhibited the reproduction of vesicular
stomatitis virus in a culture of chick fibroblasts. When the polymers were
combined with neomycin, the extent of inhibition of virus reproduction in-
creased from 56.8 to 90.3%. (Neomycin alone did not reduce the infectious
titer of the virus). Complexes of polyadenylic and polyuridylic acids also
exhibited marked interferonogenic ability in vitro, but less than that of
some other inducers.

1/1

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1/2   011   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--METHOD OF PREPARATION OF 2,C PRIME14,CYTIDINE AND URIDINE
  NUCLEOTIDES WITH THE USE OF ENZYME PREPARATION FROM M-1 RAT SARCOMA -U-
AUTHOR--SILAYEVA, S.A., AVDEYEVA, L.V., DEBOV, S.S.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 207-210

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RAT, SARCOMA, PROTEIN, ENZYME, NUCLEOTIDE, NUCLEOSIDE, CARBON
  ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0645   STEP NO--UR/0301/70/016/002/0207/0210

CIRC ACCESSION NO--AP0102631
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0102631
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF PREPARATION OF C
PRIME14 LABELLED CMP, UMP, CDP, UDP, CTP AND UTP FROM CORRESPONDING C
PRIME14 NUCLEOSIDES WITH THE USE OF PROTEIN FRACTION OBTAINED FROM M-1
RAT SARCOMA WAS DESCRIBED. THE SUPERNATANT OBTAINED AFTER
CENTRIFUGATION OF TUMOR HOMOGENATE AT 105.000 G, OR PROTEIN CONTAINING
SOLUTIONS PREPARED FROM FRACTIONS ISOLATED FROM CELL FREE EXTRACTS AT
25-50PERCENT, 25-60PERCENT, AND 25-80PERCENT OF SULPHATE AMMONIA
SATURATION WERE USED AS THE ENZYME SOURCE. DURING THE INCUBATION OF C
PRIME14 CYTIDINE AND URIDINE WITH SUPERNATANT C PRIME14 CTP AND UTP
(WITH 40-50PERCENT OF YIELD) WERE OBTAINED. THE USE OF THE FIRST
PROTEIN FRACTION GAVE C PRIME14 CDP AND UDP (THE YIELD 70-85PERCENT).
THE SECOND FRACTION GAVE C PRIME14 CDP AND UDP (THE YIELD 50-60PERCENT),
AND THE LATTER C PRIME14 CTP AND UTP (WITH 70-85PERCENT OF YIELD). THE
SAMPLES OF NUCLEOTIDES OBTAINED WERE HOMOGENOUS AT SPECTROPHOTOMETRIC
AND CHROMATOGRAPHIC ANALYSIS, POSSESSED THE SPECIFIC RADIOACTIVITY OF
PARENT NUCLEOTIDES, AND WERE USED AS SUBSTRATES IN FOUR ENZYMATIC
SYSTEMS.

UNCLASSIFIED

USSR   UDC 539.3/5:678

UMANSKIY, E. S.; KRYUCHKOV, V. V.; DEBRIVNYY, I. Ye.,
IL'CHENKO, V. I., and TINYAKOV, V. G., Kiev Polytechnic Institute

"Stand for the Investigation of Creep and Fatigue Strength of
Composition Films of Magnetic Carrier Type at Raised Temperatures"

Abstract: A twelve-sectional experimental stand for creep and
fatigue strength investigations, developed on the Chair of the
Strength of Materials of Kiev Polytechnic Institute, is descri-
bed by reference to its general view and electromechanical and
functional schemata. The stand can also be used for testing
short-term strength and relaxation. The instrumentation of the
stand includes an automatic servomechanism for temperature con-
trol and registration (exactness $\pm 1^\circ C$) and also a multichannel
system for recording deformations on prolonged mechanical tests.
Investigation methods of creep and fatigue strength of composi-
tion films of magnetic carrier type in the interval of working
temperatures are discussed. The described stand and the develo-
ped method make it possible to study the rules of accumulation
and diminishing not only of the total but also of the reversible
(elastic and high-elastic) deformations. Four figures, five bi-
bliographic references.
1/1

- END -

CSO: 1861-W

USSR   UDC 624.07:534.1

DEBRIVNYY, I. Ye., VASILENKO, L. F.

"Torsional Vibrations of a Rod Considering Viscous and Amplitude-Nonlinear
Friction"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering
Under Oscillations of Mechanical Systems -- Collection of Works), Kiev,
"Nauk. dumka", 1972, pp 68-72 (from RZh-Mekhanika, No 3, Mar 73, Abstract
No 3V266)

Translation: The problem of forced torsional vibrations of a rod under a
harmonic external effect is discussed. Nonlinear friction corresponding to
an elliptical hysteresis loop with a skeletal line in the form of an in-
clined straight line is taken into account along with viscous friction.
The Bubnov method is applied with respect to the coordinate and the Krylov-
Bogolyubov method is applied with respect to time. A numerical example is
discussed. 5 ref. Yu. N. Novichkov.

1/1

USSR

UMANSKIY, E. S., KRYUCHKOV, V. V., DEBRIVNYY, I. Ye., IL'CHENKO, V. I., and TINYAKOV, V. G. (Kiev)

"An Installation for Investigation of Creep and Long-Term Strength of Film Materials at Reduced Temperatures"

Abstract: A description is given of an installation and a procedure for the study of creep and restoration, at static and pulsed loads, of composition films at reduced temperatures (plus 30 to minus 120°C). A distinguishing feature of the installation is the use of semiconductor thermoelectric batteries for cooling the working volume of the chamber.
    Corresponding devices and appliances were developed with semiconductor sensors, which permitted the accuracy of measurement of the forces and deformations to be considerably increased in comparison to the existing methods. Typical diagrams of creep and restoration at static and subsequent pulsed loads are presented. 4 figures. 6 references.

1/1

USSR   UDC 539.315:678

UMANSKIY, E. S., DEBRIVNYY, I. Ye., KRYUCHKOV, V. V., Kiev

"Study of the Strength and Deformation Capacity of Thin Composite   Materials Such as Magnetic Information Carriers. Report 2. Strength and Deformation Capability at Low Temperatures"

Abstract: A cryogenic chamber and system for holding and regulating the temperature of specimens of thin composite materials such as magnetic information carriers subjected to monaxial extension over a broad range of below-freezing temperatures are described. The short-term strength and deformation capability of 5 types of magnetic information carriers are studied at temperatures of 0, -20, -40, -60 and -80°C. Peculiarities of the deformation capacity diagrams of the materials studied are analyzed over the temperature range indicated; it is found that the elastic, strength, and deformation properties of magnetic information carriers are dependent on temperature.

1/1

1/2   027
TITLE—CALCULATION OF THE SELECTIVITY OF FM SIGNAL RECEIVERS —U—

UNCLASSIFIED

PROCESSING DATE—30OCT70

AUTHOR-(02)-DEBROZHANSKIY, I.A., GERASIMENKO, V.F.

COUNTRY OF INFO—USSR

SOURCE—RADIOELEKTRONIKA, VOL. 8, MAR. 1970, P. 361-369

DATE PUBLISHED——MAR70

SUBJECT AREAS—ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS—FM RECEIVER, SIGNAL IDENTIFICATION, CASCADE AMPLIFIER,
  FREQUENCY SELECTION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME——2000/0540
CIRC ACCESSION NO—AP0124235

STEP NO—UR/0452/70/008/000/0361/0369

UNCLASSIFIED

CIRC ACCESSION NO--AP0124235   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF A THEORETICAL BASIS
FOR CALCULATING THE TWO SIGNAL SELECTIVITY AND PERMISSIBLE NOISE LEVEL
OF A FM SIGNAL RECEIVER WHEN THE CASCADES SITUATED BEFORE THE LIMITER
ARE LINEAR AND THE DETECTOR CHARACTERISTIC NONLINEARITY HAS A STRONG
EFFECT ON NOISE IN THE RECEIVER OUTPUT. THE SELECTIVITY REQUIREMENTS TO
BE MET BY THE INTERMEDIATE DERIVED FOR DETERMINING THE REQUIRED
SELECTIVITY OF THIS AMPLIFIER FROM A GIVEN TWO SIGNAL SELECTIVITY OF THE
FREQUENCY DETECTOR AND THE SHAPE OF ITS CHARACTERISTIC. IT IS ALSO
SHOWN THAT AN EXTENSION OF THE LINEAR SECTION OF THE DETECTOR
CHARACTERISTIC DOES NOT SIGNIFICALLY IMPROVE THE TWO SIGNAL SELECTIVITY
OF THESE RECEIVERS.

UNCLASSIFIED

USSR

ROYTRAK, A. I., DEDABRISHVILI, Ts. M., and GOTSIRIDZE, I. K., Scientific
Research Institute of Physical Culture, Georgian SSR

"The Expectancy Wave (E-Wave) in the Presence of Muscular Fatigue"

Abstract: E-waves were studied as possible indexes of muscular fatigue.
Sports school students and youths not involved in sports responded to an
instruction for motor activity (pressing a button) 1-3 sec after a preparatory
sound signal prior to and after work on a bicycle ergometer. Light motor
activity (balancing on the exerciser) caused E-waves to be more distinct than
those recorded at rest. After exercising, E-waves were suppressed for varying
periods of time depending on the amount of exercise and the test subject's
background: E-wave recovery took longer for non-athletes than for athletes. On
the example on one test subject, recovery times were 4, 7, 13, and 17 minutes
after working on the exerciser 1, 1.5, 2.5, and 3 minutes. It is concluded that
E-waves are a better index of muscular fatigue than the EEG.

1/1

USSR

UDC 577.4

GORBATOV, V. A., DEDEGKAYEV, A. G.

"Forbidden Configurations for Parallel Decomposition of Automata"

V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 113-120 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V246)

Translation: For decomposition (expansion in a "direct product," that is, in a system of parallel operating automata) the states of the automaton are presented in the form of a set of states of several automata, and the transfer function must be uniquely defined in each of these components. The required attributes that the automaton be subject to decomposition are indicated in terms of the problem of coloring the graph of the initial automaton.

1/1

USSR   UDC 577.4

DEDEGKAYEV, A. G.

"Some Properties of Automaton Graphoids not Permitting Parallel Decomposition"

V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach (mathematical Economic Methods and Programming Economic Planning Problems—collection of works), Moscow, 1972,   pp 120-126 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V247)

Translation: The necessary conditions of decomposition of an automaton (Abstract No 12V246) in terms of the properties of the contours of the graph of the automaton are established.

1/1

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USSR

GORBATOV, V. A., DEDEGKAYEV, A. G.   UDC: 519.1

"A Method of Splitting Forbidden Figures in Constructing the Parallel Decomposition of Systems"

Moscow, Prikl. probl. teorii sistem i sistemotekhniki--sbornik (Applied Problems of the Theory of Systems and Systems Analysis--collection of works), 1973, pp 86-93 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V399)

Translation: By system the authors have in mind here a finite automaton. A study is made of the possibility of parallel decomposition of automata. This problem reduces to the problem of coloring a certain graph.

1/1

USSR

UDC 577.4

GORBATOV, V. A. and DEDEGKAYEV, A. G.

"Forbidden Figures in the Parallel Decomposition of Automatons"

Moscow, V sb. Ekon.-mat. metody i programmir. plan.-ekon. zadach
(Economic-Mathematical Methods and Plan-Economy Programming--
collection of works) 1972, pp 113-120 (from RZh--Matematika, No 12,
1972, Abstract No 12V246)

Translation: In decomposition (expansion in the "direct product":
i.e., in a system of parallel-operating automatons) the states of
the automaton are put in the form of a set of states of several
automatons, and the function of the transformations must be unique-
ly determined for each of these components. In terms of the prob-
lem of coloring the graph of the original automaton, the necessary
signs that the automaton may undergo decomposition are indicated.
V. Shevyakov

1/1

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2001

86-00513R002200620009-0

USSR

CHETYRKINA, N.A., KARACHENTSEVA, Z.V., MITROFANOV, V.V., DEDEGKAYEV, T.T.,
BELOV, N.A., ERLIKH, R.N., VASYUTINA, Z.V.

"Carbon Insertion In Epitaxial Layers Of Silicon And Effect Of Growth Conditions On Their Formation"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn.pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 1(58),pp 47-50 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B79)

Translation: A study is made of the defectiveness of epitaxial layers of Si connected with a high carbon content. It is shown that in the initial state epitaxial layers grown by hydrogen reduction of tetrachlorated silicon have a microuniformity characteristic of the presence of finely-divided insertions of the second phase. In the process of heat treatment at 1150° C in an oxygen atmosphere, a decrease takes place of the density of microdefects and an increase of separation of the second phase containing carbon and oxygen. The results are presented of tests of preparation of epitaxial layers with a reduced carbon content. 6 ref. Summary.

1/1

USSR   UDC 621.382.2

DZHAFAROV, T. D., DEDEGKAYEV, T. T., DOLGINOV, L. M.

"Investigation of the Concentration Profiles of Diffused Heterojunction of GaP—GaAs and InP—InAs with an Electron Microprobe"

Translation: The method of x-ray spectral microprobe analysis is used to investigate the concentration profile for the components of smooth heterojunctions of GaP—GaAs and InP—InAs prepared by diffusion of phosphorous into monocrystalline wafers of gallium arsenide and indium arsenide. 2 ill. 3 ref. Summary.

1/1

USSR   UDC 621.791 539.43

LEBEDEV, T. A., DEDEKCAYEV, T. T., OSTASHEV, V. V., Leningrad

"Study of the Structure of the Transient Zone of a Composite Material During Cyclical Loading"

Kiev, Problemy Prochnosti, No 7, Jul 73, pp 75-79

Abstract: Results are presented from studies performed in order to construct an overall picture of the rupture of reinforced composite materials under cyclical loading. A composite material based on steel and titanium (steel 20 and titanium alloy OT4-1) was tested under flat bending in alternate directions. The relationship of surface reactions at the fiber-material boundary to the nature of rupture is demonstrated.

1/1

UNCLASSIFIED

TITLE--BILE BYPASSING OPERATIONS IN MECHANICAL JAUNDICE ASSOCIATED WITH ALVEOCIATED WITH ALVEOCOCCOSIS OF THE LIVER -U-

PROCESSING DATE--18SEP70

AUTHOR-(03)-DEDERER, YU.M., KRYLOVA, N.P., MELENTYEVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--KHIRURUGIYA, 1970, NR 2, PP 16-20

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BILE, SURGERY, JAUNDICE, LIVER, TUMOR, PARASITIC DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1317

STEP NO--UR/0531/70/000/002/0016/0020

CIRC ACCESSION NO--AP0054201

UNCLASSIFIED

CIRC ACCESSION NO--AP0054201

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ISSUE SETS FORTH THE RESULTS
OF BILE BY PASSING OPERATIONS PERFORMED IN 93 PATIENTS FOR MECHANICAL
JAUNDICE ASSOCIATED WITH ALVEOCOCCOSIS OF THE LIVER. FIVE PRINCIPAL
TYPES OF OPERATIVE INTERVENTIONS WERE CARRIED OUT,
CHOLANGIOHEPATOJEJUNOSTOMY WITH A CLOSE DRAINAGE (IN LOCALIZATION OF THE
PARASITIC TUMOR IN THE RIGHT LOBE AND HEPATIC PORTALS, 41 OPERATIONS),
CHOLANGIOCHOLECYSTOJEJUNOSTOMY OR CHOLANGIOCHOLECYSTOGASTROSCOPY (IN
PARASITIC TUMOR IN THE LEFT LOBE, FIVE OPERATIONS CAVERNOJEJUNOSTOMY AND
IN THE PRESENCE OF THE LESION IN THE DISINTEGRATION CAVITY COMMUNICATING
WITH A LARGE BILIARY PASSAGE IN PROFILIRATION, IN ALVEOCOCOCCUS
PROLIFERATION NOT ONLY INTO THE RIGHT AND LEFT HEPATIC DUCTS BUT EVEN
MINOR BRANCHING, DISSECTION OF THE CONTRAL PART OF THE PARASITIC NODE
WITH DRAINAGE AND SUBSEQUENT FISTULOJAJUNOSTOMY. IN COMPRESSION OF
MAJOR DUCTS BOUGINAGE AND INTERNAL DRAINAGE WAS DONE DURING THE
OPERATION. THE OPERATION ELIMINATED COMPLETELY IN 35 PATIENTS, REDUCED
IN 24. 10 PATIENTS WERE DISCHARGED WITHOUT CHANGES AND 23 DIED. THE
AVERAGE LIFE SPAN COMPRISED 2-3 YEARS. THE AUTHORS ARRIVED AT THE
CONCLUSION THAT SUCH OPERATIONS IN A COMPLEX OF ANTIPARASITIC AGENTS
IMPROVE THE STATE OF PATIENTS.

USSR

UDC 621.385.832:681.327.67

MALKIYEL', B. S., DEDIK, O. O., MEL'NICHENKO, L. P., VASHCHENYUK, N. N.

"Storage Cathode Ray Tube"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsv, Tovarnyye Znaki, No 16, 8 May 70, p 32, Patent No 269981, Filed 11 Feb 67

Translation: This Author's Certificate introduces a storage cathode ray tube with a visible image and pickup of the analog signal containing an electron gun, a deflecting system, and a storage unit comprising a distributed cathode, a collector and a target. The tube is distinguished by the fact that in order to improve uniformity with respect to the read signal amplitude the tube contains a collimating lens and a retarding grid with a screen ring in front of the collector on the electron gun side.

1/1

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USSR

UDC: 537.312.62

KAPLUN, Z. F., IVANITSKIY, K. P., DEDIK, Yu. V.

"A Unit for Coupling a Superconducting Resonator to External Waveguide Channels"

USSR Author's Certificate No 265595, filed 16 Feb 68, published 19 Jun 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D642 P)

Translation: This Author's Certificate introduces a unit for coupling a superconducting resonator to external waveguide channels. The patent is based on Author's Certificate No 229625. As a distinguishing feature, the transient attenuation between the input and output waveguides is increased by making a section of the inner jacket of the cryostate located close to the gaps in the above-mentioned waveguides in the form of a truncated cone with angle of inclination of the generatrix of the order of 60° relative to the axes of the waveguides.

1/1

- 147 -

USSR

DEDIKOV, E. A., PANYSHEV, A. V. and TIKHENKO, A. Yu.

"The Statement of the Problem of Ordering of the Structure of an Information Model of Data Processing"

Obshch. Teoriya Sistem [General Systems Theory -- Collection of Works], Kiev, 1972, pp 37-42 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V753).

Translation: The task of ordering of the structure of an information model of data processing on the basis of graph $G' = (X, M)$, called an ordered graph of graph G, is stated. Graph G is defined as the graph of the structure of the information flows in the set of indicators X. The task of ordering is reduced to production of an isomorphic graph $G' = (X^0 X^1 X^2, \ldots, X^m, M)$ from graph $G = (X, M)$. An algorithm is suggested to order graph G, using the matrix of incidences of graph G. An example is presented, illustrating the operation of the algorithm. Based on the definition of an ordered graph, the following statements are proven: 1) all points in the same layer of graph G' have the same order, 2) based on the property of transitiveness, the relationship < and the absence of closed paths in graph G', there is a layer X^m,

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USSR

Dedikov, E. A., Panyshev, A. V. and Tikhenko, A. Yu., Obshch. Teoriya Sistem, Kiev, 1972, pp 37-42.

consisting of at least one point with the maximum order in relationship to the other points of the graph.

T. Sidorova

2/2

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USSR

DEDIKOV, E. A., TIKHENKO, A. Yu.

"Determination of the Contours of Oriented Graphs"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. [Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1973, No 27, pp 18-20 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V359 by the authors)

Translation: The problem of determination of the contours of oriented graphs is studied. A classification is presented of possible types of contours. Determination of the contours is based on a procedure of ordering of the initial graph on the basis of the available matrix of incidences. Using the estimates presented, a certain number of lines is removed, breaking up the contours, and the graph is ordered. Determination of paths in an ordered graph between points incidental to the lines removed allows the contours of the oriented graph to be defined.

1/1

USSR

DEDIKOV, E. A., PANISHEV, A. V.

"Setup of Minimum Width in a Connected Graph without Contour"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb.
[Automation Instruments and Systems. Republic Interdepartmental Thematic
Scientific and Technical Collection], 1973, No 26, pp 52-57 (Translated
from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V409, by
the authors).

Translation: A setup of minimum width is constructed in a graph. Its appli-
cations to information-logic structures defined by graphs of algorithms is
indicated.

1/1

USSR

UDC: 51

DEDIKOV, E. A., PANISHEV, A. V., TIKHENKO, A. Yu., FEDOROV, A. A.

"Method of Ordering and Analysis of the Structure of an Information Model of Data Processing"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-tekhn. Sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 24, pp 45-51 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V479, by the authors)

Translation: A formal analysis is presented of the structure of an information model of data processing. The apparatus of graph theory is used to represent the structure. The problem of ordering and analysis of the structure is stated. Algorithms and block diagrams are developed for the solution of a number of problems of structural analysis, and examples are presented.

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USSR

UDC 51

DEDIKOV, E. A., PANISHEV, A. V., TIKHENKO, A. Yu., FEDOROV, A. A.

"On One Method for the Ordering and Analysis of the Structure of an Information Model for Data Processing"

Translation: A formal analysis is given of the structure of an information model for data processing. The apparatus of the theory of graphs is used to represent the structure. The problem of ordering and analysis of the structure is formulated. Algorithms and block diagrams are developed for solving many problems in the analysis of the structure, and examples are given. Authors abstract.

1/1

USSR

UDC: 8.74

DEDIKOV, E. A., SENDEROV, A. A.

"Some Questions Relating to Solution of the Generalized Steiner Problem"

Translation: The paper deals with the relation between the generalized Steiner problem and the construction of structures which are optimum with respect to "length". Existing methods of solution are briefly analyzed. An algorithm is proposed which utilizes the property of organization of a function. Bibliography of 12 titles. Authors' abstract.

1/1

USSR

UDC: 51

KUZ'MIN, I. V., DEDIKOV, E. A., KUKHAREV, B. Ye.

"A Method of Constructing a Global Criterion in Mathematical Programming Problems"

Translation: A procedure is considered for reducing the object functions of a mathematical programming problem to a united mathematical form which can be used as a basis for formulating global criteria. Two types of global criteria are proposed for evaluating a compromise solution from the stand-point of the minimum sum of losses relative to each localized criterion with regard to weight coefficients, and the minimum of maximum losses (minimax). Errors in linearizing the functions of localized criteria are presented. Authors' abstract.

1/1

Theoretical Automation

USSR

KUZ'MIN, I. V., DEDIKOV, E. A., KUKHAREV, B. Ye.

"Method of Obtaining a Global Criterion in Problems of Mathematical Programming"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya; November-December, 1971; pp 11-2

Abstract: The authors consider a procedure for reducing specific functions of a problem in mathematical programming to a single mathematical form, on the basis of which global criteria can be formulated. Two types of global criteria are suggested for evaluating a compromise solution from the point of view of the minimum of the sum of the losses with relation to each local criterion, taking into account the weight coefficients and the minimum of the maximum losses (minimax). The errors in linearization of the functions of local criteria are found.

The article includes 5 equations and a graph showing a function and its linearization.
1/1

USSR

VANYUSHIN, B. F., DEDIYEVA, YE.-P., MAZIN, A. L., MITINA, V. S., and IVANOV-
SKIY, N. K., Interfaculty Laboratory of Bioorganic Chemistry, Moscow State
University imeni M. V. Lomonosov, Chair of Biochemistry Saratov Medical
Institute

"Some Structural Characteristics of DNA in Pasteurella pestis Strain EV"

Moscow, Biologicheskiye Nauki, No 12, 1970, pp 82-86

Abstract: DNA isolated from P. pestis EV cells is hyperchromic after thermal
denaturation (32 to 34%). The molecule is two-strand and contains guanine
(24.3 mol.%), cytosine (24.3 mol.%), adenine (25.6 mol.%), N^6-methyladenine
(0.27 mol.%), thymidine (25.5 mol.%), and guanine+cytosine (48.6 mol.%).
Some 56% of the nucleotide material is concentrated in the mono- and dipyrimi-
dine sequences. P. pestis DNA also differs from some other bacterial DNA in
having more dipyridine than monopyrimidine fragments, i. e., the Pur-Pyr-Pyr-
Pur sequence is much less common than the Pur-Pyr-Pur sequence. This dis-
tribution explains why no bacterial DNA can form "molecular Hybrids" with
DNA from animal cells. The nature of the distribution of pyrimidines in P.
pestis DNA shows that bacterial DNA possesses some peculiarities of organiza-
tion of nucleotide sequences that distinguishes it from the DNA of higher
organisms.
1/1

USSR

UDC 51:330.115

DEDIKOV, E. A., TIKHENKO, A. Yu., CHERNINA, L. P.

"A Heuristic Algorithm for the Problem of Optimal Loading of Equipment Considering Reloading Time"

Tekhn. Kibernetika. Vyp. 11 [Engineering Cybernetics, No 11 -- Collection of Works], Kiev, 1970, pp 28-36, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V558).

NO ABSTRACT.

1/1

USSR

UDC 621.438,662.995.001.24

DEDKOV, G. V., DEDUSENKO, YU. M., and KRAMARENKO, L. A.

"Optimal Distribution of the Heat-Exchange Surface for the Regenerator and the Coolers in a Gas-Turbine Power Plant"

Khar'kov, In-t Probl. Mashinostr. AN USSR (Institute of Problems of Machine Building, Academy of Sciences, Ukrainian SSR), 1974, ill., bibliography. Manuscript deposited at VINITI (All-Union Institute of Scientific and Technical Information), No 4795-72. Deposited 26 September, 1972 (from Referativnyy Zhurnal—Turbostroyeniye, No 1, 1973, Abstract No 1.49.127 Dep)

Translation: A method is presented for finding the optimal distribution of the relative resistance and the heat-exchange surface for the regenerator and the coolers in gas-turbine power-plant systems. According to this method, the parameters of the regenerator are found with account taken of the optimal relationship of the average stream velocities, and the parameters of the coolers are found with account taken of the optimal velocity distribution of the gas stream and the flow rates of the cooling liquid for each of the coolers. An illustrative example is provided for the regenerative system of a gas-turbine power plant with four coolers. 3 figures.

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DEDKOVA, V.D.

So: JPRS 59279
14 June 73

EFFECT OF DISORIENTATION OF THE SUBSTRATES ON THE DEGREE OF LATTICE PERFECTION OF THE EPITAXIAL LAYERS OF GALLIUM ARSENIDE

[Supplement to the article by I. G. Lavrent'yeva, M. P. Yakubenya, D. N. Polyakov, V. D. Dedkova, N. K. Ivanov, L. G. Nesteruk, L. I. Porokhovnichenko, V. T. Shiyarenko; Novosibirsk; Protsessy Rosta i Struktura Monokristal-licheskikh Sloyev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 187-188]

This article appeared in the first part of the collection (page 371). When assembling the material the editors failed to include this table. We beg the authors' pardon and include this table in the present publication.

Specimen No.	Disorientation angle (l₂) GaAs transport, mₐ, mg/hr		Specimen oriented (111)A				Disoriented specimen			
			V_i, ml·cm·cm⁻²·hr	t_1/t_2	N_t, cm⁻²	Dis-ori-enta-tion angle	V_i, ml·cm·cm⁻²·hr	t_1/t_2, /N_t, cm⁻²		N_t, cm⁻²

Closed gas transport system

6375	22	0.67	58	21	650	1.55	1.1·10⁵	2°	27	1.55	5.0·10³	4·10²
6515	22	0.67		24	750	1.52	1.0·10⁴	3°	32	1.57	2.6·10⁴	1·10²
6535	22	0.67				1.73	4.3·10⁵	3°		1.55	5.7·10⁵	6·10²
6335	22	0.67				1.75	1.4·10⁶	4°				

Open gas transport system

7752	15	0.67	17	14	370	1.59	1.5·10²	2°	25	1.34	2.5·10²	4·10²
7760	15	0.67	28	8	260	1.62	6·10²	3°	22	1.52	7.0·10²	4·10²
7765	15	0.67	20	8	170	1.54	···	3°	28	1.50	2.7·10⁴	
7764	15	0.67	21		110	1.59	···	4°	24	1.46	1.4·10⁵	

206	12	13.5	30	6	6	1.55	···	2°	23	1.30	1.0·10⁶	
18		13.5	10	10	8	1.20	···	3°	16	1.28	1.3·10⁵	
205		13.5	10	6	8	1.50	···	3°		1.50	1.3·10³	
20		23	20	21	18	1.50	4.0·10²	3°		1.50	2.5·10⁶	

Note: In column 3 the symbol (L_2) denotes the following: for the closed gas transport system, the iodine concentration in mg/cm³; for the open gas transport system, the saturated vapor pressure of iodine above the source in mm Hg.

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USSR

SAVEL'YEV, Yu. P., and DEDOV, G. S.

"Calculation of Base Pressure in Laminar Flow of a Plasma Past a Ledge"

Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of
Aviation Instrument Manufacture), 1970, vyp. 66, pp 106-110 (from RZh-
Mekhanika, No 1, Jan 71, Abstract No 1B11 by Yu. M. Mikhaylov)

Translation: The article presents the calculation of the two-dimensional
flow of an ideal conducting gas on a ledge. The magnetic pole is assumed
to be directed perpendicularly to the velocity of undisturbed flow. There
are no electric fields. The equations of magnetic hydrodynamics are re-
duced to dimensionless form and the dividing streamline is determined.
Total pressure on the dividing streamline as well as static pressure behind
the trailing shock wave are calculated. Equalizing these quantities, the
authors calculate the angle of reversal of shock wave flow δ. It is
assumed that angle δ corresponds to the angle of reversal of external flow
around the edge of a ledge in a Prandtl-Mayer flow. This permits calcu-
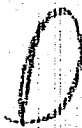lation of the Mach number before flow reversal, as well as base-pressure
coefficient.
1/2

USSR

SAVEL'YEV, Yu. P., and DEDOV, G. S., Tr. Leningr. in-t aviats. priborostr. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp. 66, pp 106-110 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B11 by Yu. M. Mikhaylov)

Abstractor's Note. With the given configuration of two-dimensional flow and magnetic field, the assumption regarding the absence of electric fields leads to the discarding in the equations of terms which have the same order of magnitude as those which are retained.

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— 12 —

1/2   018
UNCLASSIFIED
PROCESSING DATE--20NOV70

TITLE--STRUCTURE OF SYNAPSES LOCALIZED IN SUPRAOPTIC NUCLEUS NEURONS, RAT
-U-

AUTHOR-(02)-DEDOV, I.I., VOYTKEVICH, A.A.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 12(2): 243-245, 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RAT, NEURON, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/C286   STEP NO--UR/9053/70/012/002/0243/0245

CIRC ACCESSION NO--AP0134091
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UNCLASSIFIED

CIRC ACCESSION NO--AP0134091   PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESYNAPTIC PART OF ONE TYPE
OF SYNAPSE HAS SMALL (200-400 ANGSTROM) SYNAPTIC VESICLES. SYNAPSES OF
THE OTHER TYPE POSSESS, IN ADDITION, DENSE CORE VESICLES (600-800
ANGSTROM IN DIAMETER). THE SYNAPSES ON SUPRAOPTIC NUCLEUS NEURONS ARE
POSSIBLY TERMINALS OF CHOLIN AND MONOAMIN ERGIC FIBERS OF RETICULAR
FORMATION NEURONS.   FACILITY: LAB. NEUROENDOCRINOL., INST. MED.
RADIO., ACAD. MED. SCI. USSR, OBNINSK, USSR.

UNCLASSIFIED

USSR   UDC 51:621.391

DEDOV, L. A., LOMAYEV, G. V.

"On an Analytical Graphic Method for Determining the Quantity of Information
at the Output of Measuring Devices"

Translation: This paper concerns a development of an engineering method for
determining information at the output of a digital measuring device or any
other measuring device with a digital scale. Authors abstract.

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USSR

UDC 51:621.391

DEDOV, L. A., LOMAYEV, G. V.

"Graphoanalytical Method of Determining the Information Quantity at the Output of Measuring Devices"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Application of Computer Engineering in Machine Building -- collection of works), Izhevsk, 1971, pp 92-98 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V440)

Translation: This paper is devoted to the development of the engineering method of analyzing information at the output of a digital measuring device or any other measuring device with a digital scale.

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- 31 -

USSR

UDC 624.07:534.1

STOLYAROV, N. N., DEDOV, N. I.

"Bending and Stability of Flexible Shells and Shells of Nonlinearly Elastic Material Under Fixed Fastening of the Rims"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 40-44 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V296)

Translation: The finite difference method is used to solve a series of geometrically nonlinear problems on the bending of rectangular plates and hollow shells of a nonlinear material acted on by a transverse load uniformly distributed either over the entire surface or over a rectangular area in their center. The systems of nonlinear algebraic equations relative to values of the force functions and bends at nodal points of the orthogonal grid are solved by the general iteration method. Computational results of critical values of loads for cylindrical panels made of non-linearly elastic material, the characteristics of which are given, are presented. E. I. Sokolov.

1/1

USSR

UDC 539.3

KORNISHIN, M. S., STOLYAROV, N. N., DEDOV, N. I.

"Large Bends of Plates Rectangular in Plane and of Hollow Shells of Nonlinearly Elastic Material"

V sb. Issled. po teorii plastin i obolochek. No. 9 (Studies in the Theory of Plates and Shells. No. 9 -- Collection of Works), Kazan', Kazan' University, 1972, pp 157-168 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V108)

Translation: Equations of the theory of hollow shells made of nonlinearly elastic material are given considering large bends and the compressibility of the material. An algorithm based on the finite differences method is given for solving the problem of the bending of plates and shells that makes it possible to take into account both the joint and individual effect of geometric and physical nonlinearities. The results of a calculation of the bending of a plate and shell pinched along the edge are presented. A comparison of the geometrically nonlinear solution with the geometric and physically nonlinear solution shows that the effect of physical nonlinearity of the material on the magnitude of the load is approximately 30% and the effect on the magnitude of the stress is approximately 38%. 6 ref. N. V. Kolkunov.

1/1

USSR   UDC 612.434.018.014.482

VOYTKEVICH, A. A. (Deceased), and DEDOV, V. I., Laboratory of Radiation
Neuroendocrinology, Scientific Research Institute of Medical Radiology,
Academy of Medical Sciences USSR, Obninsk

"Differentiation and Reaction of Pituicytes of the Neurohypophysis Under
Conditions of General Irradiation"

Abstract: Rats 1-60 days old were subjected to irradiation with gamma-rays
in a dose of 200 R. The effects of the irradiation on the differentiation of
pituicytes of the neurohypophysis were studied. Normally this differentiation
is completed towards the age of 2 weeks. Irradiation produced changes in the
pituicytes, which consisted of a sharp increase in the number and volume of
lipid inclusions in their cytoplasm and formation of characteristic cilia in
differentiating pituicytes. The increase in the amount of lipid inclusions
was associated with an augmented release of neurosecretion into the blood,
the latter being a phenomenon that is typical for stress conditions.

1/1

USSR

DEDOV, V. I., Laboratory of Radiation Neuroendocrinology, Institute of
Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Differentiation of Hypothalamic Neurosecretory Cells After Whole-Body
Gamma-Irradiation"

Abstract: Postnatal differentiation of secretory neurons in the supraoptic
and paraventricular nuclei of the hypothalamus was investigated using 5, 10,
and 15-day-old rats irradiated with 200 r 10-12 hours after birth, and on
control rats. Gamma irradiation causes a significant reduction in the size
of nerve cell nuclei in the supraoptic nucleus on the fifth day, with the
maximum reduction observed on the 15th day, at which time the whole neurocyte
becomes significantly smaller than it is in control animals. The cytoplasm
of the shrunken nerve cells contains single granules of secreta. In the
paraventricular nucleus, these changes begin to develop somewhat later.
Vesicles in the neurosecretory terminals in the neurohypophysis become
empty, because the hormone is transferred into blood vessels. It is con-
cluded that ionizing radiation inhibits growth and differentiation of the
1/2

USSR

UDC 632.95

VASHKOV, V. I., DEDOV, V. S., DREMOVA, V. P., SMIRNOVA, S. N., OSIPYAN, V. T., MASLIY, L. K., KOCHANOVA, A. P., and MARKINA, V. V.

"Entomological and Toxicological Characteristics of a New Repellent -- Carboxide"

Tr. VNII dezinfektsii i steriliz. (Works of All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, Vol 2, pp 30-37 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N465 by T. A. Belyayeva)

Translation: Carboxide is an effective repellent for mosquitoes, midges, and some species of horseflies and mites. As creams and ointments are made, protective film-forming substances must be put in since carboxide is absorbable through the skin. Refined carboxide, when used in its various forms (ointment, cream etc.), causes no lesions on exposed areas of the body and has no side effect on the human organism. Use of unrefined (industrial) carboxide to make various forms of the repellent can induce skin irritation.

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USSR

DEDUKH, L. M., NIKITENKO, V. I.

"Investigation of Dislocations and Their Influence on the Processes of Magnetization of Iron-Yttrium Garnet Monocrystals"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 6, 1970, pp 1,235-1,239

Abstract: A study is made of the dislocation structure of iron-yttrium garnet monocrystals, grown from a solution in a fusion by means of the polarization-optical method. The positions of the dislocation lines, the sliding surfaces, and the Burgers vectors are determined. The interaction of individual dislocations with the domain structure of the crystal during its magnetization in weak magnetic fields was studied direction, and the data obtained are analyzed on the basis of consideration of the magnetoelastic interaction between the dislocation-stress field and the magnetization on the domain boundaries.

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1/2   041   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--DISLOCATING STRUCTURE AND OPTICAL HETEROGENEITIES OF YTTRIUM
   ALUMINUM GARNET SINGLE CRYSTALS -U-
AUTHOR-(05)-DEDUKH, L.M., ZHIZHEYKO, I.A., BAGDASAROV, KH.S., KEVORKOV,
   A.M., NIKITENKO, V.I.
COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 334-41

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--GARNET, SINGLE CRYSTAL, CRYSTAL DISLOCATION, YTTRIUM COMPOUND,
   LASER PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1570   STEP NO--UR/0070/70/015/002/0334/0341

CIRC ACCESSION NO--AP0125196
                         UNCLASSIFIED

2/2   041
CIRC ACCESSION NO--AP0125196   PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISLOCATIONS WERE OBSD. BY MEANS
OF AN OPTICAL POLARIZATION STUDY OF THE BIREFRINGENCE RELATED TO SINGLE
DISLOCATIONS IN ND PRIME3 POSITIVE DOPED Y SUB3 AL SUB5 O SUB12 SINGLE
CRYSTALS. THE INFLUENCE OF DISLOCATIONS OF THE LASER CHARACTERISTICS OF
THE CRYSTAL IS DISCUSSED, AND A FURTHER STUDY OF OPTICAL INHOMOGENEITIES
IS PRESENTED.   FACILITY: INST. KRISTALLORG., MOSCOW, USSR.

DEDUKHOVA, V. I.

space physiology

CELLULAR RESPIRATION DURING HIGH-ALTITUDE ADAPTATION OF RATS

Data on the existence of changes in the oxidative and oxidative phosphorylation systems during high-altitude adaptation are contradictory. Z. I. Barbashova (1960, 1966) cites information on the appearance of difference in tissue respiration and the activity of cytochrome-C-oxidase with a decrease in oxygen partial pressure to 11 mm Hg. According to other data, changes in the activity of cytochrome-C-oxidase and succinate dehydrogenase are not observed during adaptation to an oxygen inadequacy in the first generations (Ye. M. Kreps, et al.; Ye. Yu. Chenykayeva and G. F. Degtyareva). Ziegler investigated the parameters of oxidation and oxidative phosphorylation of rat liver homogenates after adaptation in a pressure chamber at 295 and 350 mm Hg for two weeks. After adaptation at 295 mm Hg he did not detect significant changes in the investigated parameters. Marked changes were detected after adaptation at 350 mm Hg, but an adaptation cutoff was observed in this case. Small changes in the respiratory system during high-level adaptation were registered in hepatic and cardiac mitochondria (Strickland, et al.).

There has been relatively little study of the effect of high-altitude adaptation on the oxidation and oxidative phosphorylation of cerebral mitochondria (the brain being one of the organs most sensitive to hypoxia). Judging from the results of investigations by Japanese authors (Ozawa, et al., 1967a), cerebral mitochondria are more sensitive to hypoxia than hepatic and cardiac mitochondria; the decrease in respiratory control of cerebral mitochondria observed after anoxia is related, in particular, to an accumulation of fatty acids. These authors also demonstrated that when mitochondria are washed from the brain the K+ is almost completely eliminated; however, much bound K+ remains in the hepatic mitochondria (Ozawa, et al., 1967c). Precisely this probably explains the need for adding high K+ concentrations (40 mM or more) to the medium for incubating cerebral mitochondria for obtaining a high respiratory control and high oxidation rates.

USSR

UDC $669.183.046.58:669.295$

DEDUSHEV, L. A., and FILIPPOV, S. I., Moscow Institute of Steel and Alloys, "Elektrostal" Plant

"The Distribution of Titanium Between Metal and CaO-MgO-TiO$_2$-Al$_2$O$_3$-CaF$_2$ Slag"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1972, pp 19-23

Abstract: A study was made of the distribution of titanium between a CaO-MgO-TiO$_2$-Al$_2$O$_3$-CaF$_2$ slag melt and an Fe-Cr-Ni alloy containing 3.12%Ti. The titanium distribution coefficient between slag and metal is determined by the concentration of Ca, Mg, and Ti oxides in the slag. This makes it possible to consider the investigated slag system as a pseudoternary system in which CaF$_2$ and Al$_2$O$_3$ appear as diluents. From the position of the behavior of the slag system as a pseudo-ternary system, calculation formulas are developed on the basis of experimental data. Results of calculations by the suggested formulas agree with experimental data. Three figures, one table, twelve formulas, thirteen bibliographic references.

1/1

USSR

UDC:669.187.6

MATUSHKINA, L. I., KLYUYEV, A. M., DEDUSHEV, L. A., KOSYREV, L. K., VOLKOV, S. Ye., and SHARAPOV, A. A.

"Thermal Inertia in Electric Slag Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 167-169

Translation: The influence of stopping (for 1-5 min) the electric slag process on the final macrostructure of ingots of high-chrome heat-resistant steel type EI961, high-chrome manganese steel type EI835, and type ShKh15 ball bearing steel is studied.

The surface of the ingots produced is satisfactory with slight corrugations in the areas where the process was stopped. Obviously, the corrugations are caused by local disruption of the dynamic equilibrium between heat input and outflow.

However, the stopping of the process within the limits studied does not cause appearance of macrostructural defects, since under the conditions of electric slag remelting the metal bath has significant thermal inertia. 1 table.

1/1

DEDUSHKIN, V.B.

Glee 16

Mechanical Engr

TECHNICAL TRANSLATION

FSTC-HT-23-1066-71

ENGLISH TITLE: PLANT STANDARDIZATION FOR INCREASING ENGINE OPERATING TIME BEFORE MAJOR OVERHAUL

FOREIGN TITLE: ZAVODSKAYA STANDARTIZATGIYA NA SLUZHBE MOTORESURSE

AUTHOR: V. B. Dedushkin, Chief of the Standardization Department, *Mechanical Engineering*

SOURCE: STANDARTY I KACHESTVO, No. 10, 1970, pp. 60-62, USSR.

GRAPHICS NOT REPRODUCIBLE

NOTICE

Translated for FSTC by Leo Kanner Associates

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This translation was accomplished from a xerox manuscript. The graphics were not reproducible. An attempt to obtain the original graphics yielded negative results. Thus, this document was published as is, in order to make it available on a timely basis.

DEDYAN, E. G.

ferromagnetic films
RADIO engineer

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. D. Bakhrakh, corresponding member of the USSR Academy of Sciences and V. I. Samoylenko, candidate of engineering sciences: Nelineynyye i sverkhvysokochastotnyye Radiotekhnicheskiye Sistemy, Trudy Moskovskogo Ordena Lenina Aviatsionnogo Instituta Imeni Sergo Ordzhonikidze, Vol 2, No 215, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

CONTENTS

- a -

[I - USSR - F]

UDC 629.7.051:621.396.65.001

AN ANALYTICAL METHOD FOR SOLVING DYNAMIC EQUATIONS OF
THIN FERROMAGNETIC FILMS FOR 'SLOW' SWITCHING FIELDS

Engineers R. C. Dedyna and
N. V. Obukhov

Pages 166-173

The static characteristics of thin ferromagnetic films (TFF) have been studied in adequate detail by many authors, for example in reference [1, 2]. Working from the theory of coherent rotation, the hysteresis loops of films have been calculated, as well as critical fields of irreversible magnetization jumps, etc. The static characteristics indicated are frequently used in dynamic investigations, which cannot always be justified. On the other hand, in works where purely dynamic problems are considered, the also kinds of the switching pulses are not considered [reference 3, 4, 5], which identify the process and does not make it possible to follow the nature of the variation of the switching process as the front of the switching pulse varies.

This work was performed for the study of the switching characteristics of TFF along a longitudinal axis (axis of easy magnetization) by various kinds of rise on the ends of the solution of the equation of dynamics of a film for "slow" switching fields. The solution of the equation of dynamics of the film also made it possible to investigate the nature of the switching of TFF as a function of other parameters.

As the equation of dynamics of a TFF, the Landau-Lifshits equation was used, which in our case has the following form [reference 3]:

$$\frac{d^2\theta}{dt^2} + \ell_4\, \ell_4\gamma\alpha \frac{d\theta}{dt} + \frac{1}{2}\,\ell_4\,\ell_4\gamma H/I_s\left[\sin\theta\cos\theta\right] = 0,$$

$$-\ell_4 \ell_4 \sin\theta - h_1\cos\theta = 0,$$ (1)

where $\gamma = 1.76 \times 10^7$ (1/oersteds per second) is the gyromagnetic ratio; α is the attenuation factor; and H_k is the anisotropy field.

Having divided expression (1) by $4\pi I_s\gamma\alpha$, we obtain

$$\frac{d^2\theta}{dt^2} + \frac{d\theta}{dt} + \frac{\gamma H_k}{\alpha}\left[\sin\theta\cos\theta + h_2\sin\theta - h_1\cos\theta\right] = 0,$$ (2)

where

$$[h_2 = h_1]\; h_1 = h_2]$$
where

$$\ell = \frac{1}{4\pi I_s\gamma\alpha}$$

and its magnitude is equal to 10^{-8}.

- 1 -

Public Health, Hygiene and Sanitation

USSR

UDC 616.916.1-097.3-056.78(47-25)

ANDZHAPARIDZE, O. G., CHERVONSKIY, G. I., DECAYATSKOVA, R. G., and TABAROV-
SKAYA, I. S., Moscow Scientific Research Institute of Virus Preparations,
Danitary Epidemiological Station, Zhdanovskiy Rayon, Moscow

"Formation of Collective Immunity To Rubella in the Population of Moscow"

Abstract: Data and results obtained in a study of hemagglutination inhibi-
tion by rubella virus collected from blood sera of 1,237 Moscow residents
ranging in age from 1 to 54 years are presented. Indices included the fre-
quency of occurrence and levels of antibodies for different age groups and
the disease incidence. Several of the requisite features of collective
immunity were found which distinguish the Moscow population from other rubella
foci. It was found that in the age group of 1-3 years, 16% of the subjects
had rubella antibodies. The corresponding percentages for other age groups
were as follows: 6-7 years, 65%; 12-13 years, 72%; 18-22 years, 95% of the
subjects. Children of 3-7 years of age come down most frequently with the
disease. This is a particular feature of the data on the Moscow population.
Also, in Moscow, the highest rate of incidence is at an earlier age than in
1/2

USSR

ANDZHAPARIDZE, O. G., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 71-76

populations of other localities, with those attending nursery or elementary schools making up the bulk of patients. It was found also that men are more likely to be afflicted by the disease than are women. The percentage of seronegative subjects among pregnant women was 5.6%, which was lower than similar figures for Europe and America. It is pointed out that the epidemic situation in other regions of the country may be different because of different geographic conditions and a different population density.

2/2

USSR

UDC 621.438;662.995.001.24

DEDKOV, G. V., DEDUSENKO, YU. M., and KRAMARENKO, L. A.

"Optimal Distribution of the Heat-Exchange Surface for the Regenerator and the Coolers in a Gas-Turbine Power Plant"

Khar'kov, In-t Probl. Mashinostr. AN USSR (Institute of Problems of Machine Building, Academy of Sciences, Ukrainian SSR), 1974, ill., bibliography. Manuscript deposited at VINITI (All-Union Institute of Scientific and Technical Information), No 4795-72. Deposited 26 September, 1972 (from Referativnyy Zhurnal--Turbostroyeniye, No 1, 1973, Abstract No 1.49.127 Dep)

Translation: A method is presented for finding the optimal distribution of the relative resistance and the heat-exchange surface for the regenerator and the coolers in gas-turbine power-plant systems. According to this method, the parameters of the regenerator are found with account taken of the optimal relationship of the average stream velocities, and the parameters of the coolers are found with account taken of the optimal velocity distribution of the gas stream and the flow rates of the cooling liquid for each of the coolers. An illustrative example is provided for the regenerative system of a gas-turbine power plant with four coolers. 3 figures.

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USSR

LIKHACHEV, A. I., DEGEN, I. L., and YUZEFOVICH, G. M.

"The Effects of an Alternating Magnetic Field on Skin Permeability"

Abstract: The effects of an alternating magnetic field (AMF) on the permea-
bility of human skin to Evans blue dye were studied with 2 groups of people.
One group (18 women, 7 men, 18-44 years old) received 0.5 ml of 0.5% Evans
blue intracutaneously into the lower third of the shank on one leg. The leg
was positioned between electromagnetic terminals, with the injected area in
contact with terminal surface. That leg was exposed to AMF for 5 minutes under
the following conditions: 450 oersted field, 73 mm gap, and current potential
of 220 V and 50 cps. The other leg served as a control; it was similarly
located but the current was not applied. Another group of 25 subjects was
injected with Evans blue that had previously been subjected to AMF under the
conditions described. The diameters of the dye spots were measured immediately
after injection and 24 h following AMF treatment. Analysis of the results
showed that AMF increased tissue permeability to Evans blue in both groups;

1/2

USSR

LIKHACHEV, A. I., et al., Izvestiya Akademii Nauk Azerbaydzhan SSR, No 3, 1972, pp 99-102

in the second group, the AMF pretreated dye was resolved more rapidly. The latter effects were presumably due to delocalization of the Pi electrons on the dye molecule. The more rapid spread of dye through the cutaneous tissues was presumably due to the direct effects of AMF on capillaries and on the reflex vasodilatation mechanism.

2/2

DEGEN, I. L.

BIOLOGY

JPRS 54880

7 January 1972

② COLEEN

BIOPHYSICAL EXPLANATIONS OF THE EFFECT
OF MAGNETIC FIELDS ON BIOLOGICAL OBJECTS

/Article by Candidate of Biological Sciences I. L. Degen; Kiev, Vestnik
Akademii Nauk Ukrains'koy SSR, Ukrainian, No 9, 1971, pp 27-34/

It was by chance, apparently, that the first work of a physicist
Faraday as the founder of magnetobiology was related to blood (Mulay /1/ names
Faraday who in 1845 discovered the diamagnetic properties of dry blood
hemoglobin and decided to experiment with fresh live blood). It was
not by chance, however, that the discovery of the effect of a magnetic
field on blood served as an impetus for the development of a consider-
able number of works concerned with the sphere of biophysics.

There are a number of trends common to the investigations in
which the biomagnetic effects are explained from the point of view of
physics. One of these trends is represented by Mogendovich and his co-
workers /2-7/, who have undertaken to explain the retardation of the
erythrocyte sedimentation reaction (ROE) in a magnetic field by the
theory that erythrocytes acquire a circular movement which is counter
to Earth's gravity, a theory based on the Einstein-dCaar work concern-
ing the magnetomechanical effect. Analogous results were obtained also
in the study of the sedimentation of coagulates' suspended particles;
rotation in a constant magnetic field with a similar magnetomechanical
effect /8/. Such conclusions were drawn on the basis of investigations
conducted only in vitro.

Experiments in vivo, however, (with a rabbit in a magnetic field
with a strength of 600 e) also established a retardation of ROE /9/.
These investigations provided a basis for the claim that there are form-
ative elements in a magnetic field, such as phase particles in a col-
loidal system (blood) with a dual layer of electrons, which are forcing

- 1 -

[1 - USSR - C]

THERAPEUTIC EFFECTS OF CONSTANT AND LOW-FREQUENCY
ALTERNATING MAGNETIC FIELDS

Article by I. L. Degen, Candidate of Medical Sciences; Kiev, Meditsinskaya
Gazeta, Russian, No. 5, 1971, signed to press 26 February 1971, pp 124-153:

The number of works devoted to the study of the biological and
therapeutic effects of magnetic fields is increasing steadily
throughout the world in the last decade. The increased interest
is explained by the fact that there is presently not a single branch of
knowledge in which magnets are not used, and the strength of the magnet-
ic fields is increasing constantly. This is an area of considerable con-
cern in space research.

Hygienists are interested in the effect on the human organism of
the increasing strength of magnetic fields which is a factor in the pro-
duction environment.

A. M. Vyalov has described changes in workers, subjected to the
effect of a magnetic field under laboratory and production conditions.
The duration of those effects and the strength of the field exceeded a
certain critical level, they had a harmful effect on the organism. The
most definite effect of a magnetic field appeared locally on the hands
(hypotrophy, acrocyanosis, increased perspiration, local cooling,
erosure, consolidation and edema of the skin and of the subcutaneous cell-
ular tissue). Cardio-vascular reactions include disturbance of cap-
illary vascular functions. Electrocardiogram readings revealed
authentic vascular functions. Electrocardiogram readings revealed
of the HGK complex and, in some persons, an increase of the
wave and a tendency to vascular bradycardia.

A. M. Vyalov and his coauthors note that the effect of the magnetic
field leads to functional shifts of various systems of the organism with

A review of the literature

- 1 -

[I - USSR - C]

- 2 -

USSR

DEGEN, I. L., Hospital No 13, Kiev

"Biochemical Changes Induced by Magnetic Fields"

Abstract: Data on the biochemical effects of magnetic fields are reviewed (47 references) with particular attention to changes in enzyme activity resulting from the action of magnetic fields. The theory to the effect that the mechanism of the action of magnetic fields in altering enzyme activity is based on structurization of H_2O is discussed in the light of results obtained in experiments with H_2O structurized by the action of magnetic fields or freezing and H_2O the structure of which was destroyed by boiling. An increased level of enzyme activity as a result of H_2O structurization under the effect of biological structures is assumed in connection with this theory. The following results that have been obtained and studied that have been conducted are mentioned. Magnetized H_2O that was given to rats kept on an atherogenic diet reduced the content of cholesterol in the liver and the blood. An increase in the degree of conjugation between oxidation and phosphorylation under the effect of a static magnetic field took place both in germinating seeds of oats, rye, and
1/2

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USSR

DEGEN, I. L., Ukrayins'kiy Biokhimichniy Zhurnal, Vol 44, No 1, Jan/Feb 72, pp 116-124

beans and in the mitochondria of the rat liver. The effect of static magnetic fields in increasing the body temperature of mice after this temperature had been lowered to 20° was studied. After mice had been placed into a chamber in which the intensity of the magnetic field was the same as in outer space or on the moon, there was a steady decrease in the acid phosphatase activity of macrophages that is related to phagocytic activity. Possible applications of magnetobiological methods in medical diagnosis and of magnetic fields in therapy are mentioned — e.g., magnetic fields were found to have a beneficial effect in the treatment of edemas. It is stated that agronomists succeeded in increasing yields under the effect of even the weak geomagnetic field when seeds were oriented appropriately with respect to the magnetic meridian.

2/2

Therapy

USSR

UDC 616.757.7-007.681-085.849.11

DEGEN, I. L., 13th Kiev Municipal Hospital

"Magnetotherapy of Dupuytren's Contractures"

Leningrad, Vestnik Khirurgii, No 1, 1972, pp 135-138

Abstract: A brief discussion of the etiology and pathological anatomy of Dupuytren's contractures is followed by a summary of the results of treating 30 patients with a magnetic field. None had responded to physical therapy, balneological procedures, or injections of hydrocortisone, lidase (hyaluro-nidase preparation), or chymotrypsin. The affected hand was placed between the poles of an electromagnet generating a low-frequency (50 hz) alternating or constant field with a voltage of 450 to 530 oersteds. Each of the 5 to 40 sessions lasted 15 to 20 minutes. Recovery took place in 9 (30%) patients, substantial improvement in 12 (40%), and improvement in 6 (20%). The three patients (10%) who did not show any improvement had the third stage of the disease. Magnetotherapy was clearly effective in the first stage and brought about marked improvement in the second. Prompt treatment of the initial signs of contractures should prevent progression of the disease to the third stage which generally requires surgery. Magnetotherapy relieves pain and edema quickly and there are no contraindications to the procedure.
1/1

USSR

UDC 616.71-001.5-003.93-092.9-02;615.847.8

DEGEN, I. L., and STETSULA, V. I., Kiev Institute of Orthopedics

"Consolidation of Bone Fragments in a Constant Magnetic Field"

Moscow, Ortopediya, Travmetologiya i Protezirovaniye, No 9, 1971, pp 45-48

Abstract: The dynamics of bone (antebrachium) regeneration in 36 rats exposed 15 min a day or 20 days to a constant magnetic field at an intensity of 500 oersteds were studied. Twenty-four hours after the fracture, edema was much less pronounced than in the control while the phagocytic reaction was intense. On day 7 the periosteal reaction was less widespread in the experimental animals and smaller areas of fibrous-cartilaginous callus formed between the fragments. Between days 14 and 30 the ossification of fibrous tissue connecting the fragments was somewhat more advanced than in the control. Complete union set in by day 90, reconstruction of callus was more rapid and regeneration of the medullary canal was more pronounced. Despite the small number of experimental animals and the apparent lack of similar studies, the results are sufficiently encouraging to warrant, in the author's opinion, cautious clinical trials of a constant magnetic field to prevent posttraumatic trauma and relieve pain.
1/1

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Therapy

USSR

UDC 617:538.6

DEGEN, I. L.

"Therapeutic Action of Magnetic Fields in Surgery"

Kiev, Klinicheskaya Khirurgiya, No 3, Mar 71, pp 75-79

Abstract: Recent work on the application of magnetic fields in medicine and surgery is reviewed (52 references) with particular attention to results obtained in the USSR. It was established that after blood used for transfusions to hemophiliacs has been exposed to the action of a magnetic field, the coagulability of the recipient's blood improves considerably. Experiments by the author of this review confirmed that magnetic fields have an effect on blood coagulability. Magnetic fields were used successfully in the therapy of endarteritis obliterans and thrombophlebitis of the extremities. I. I. Morgunov (Problemy Klinicheskoy Patologii – Problems of Clinical Pathology –, Ryazan', 1966) observed that the incidence of renal colic decreased when the intensity of the magnetic activity of the earth increased, and increased when the geomagnetic activity decreased. He treated surgically removed kidney stones with water that had been magnetized and with some solutions and found that the stones disintegrated as a result of the treatment. On the basis of these results, Morgunov applied magnetized water for the treatment of patients with kidney

1/3

USSR

DEGEN, I. L., Klinicheskaya Khirurgiya, No 3, Mar 71, pp 75-79

stones and obtained good results. F. Nemec (Vnitrni Lek., 6, 541, 1967) made similar observations in experiments with kidney and bile stones. He thereupon treated patients with bile and kidney stones by giving them magnetized water to drink and obtained significant improvement of their condition. An antiin-flammatory effect of magnetic fields was observed in experiments on rabbits with burn lesions produced by submerging their ears in hot water, and also in experiments on rats. Animal experiments conducted by a number of investigators showed that magnetic fields inhibited the growth of tumors and prevented their successful implantation. A therapeutic effect of magnetic fields on experi-mental tumors was also found. Transplanted sarcomas were resorbed after the head or an animal was subjected to the action of a variable magnetic field. Fields with a constant intensity were less effective, but produced a pronounc-ed antitumor action when their effect was combined with that of adrenalin. Therapeutic action of magnetic fields in human cancer was reported. A pro-tective effect of magnetic fields of constant intensity in experimental radiation lesions was observed. Yu. A. Kholodov et al (Diagnostika i Lecheniye Nekotorykh Onkologicheskikh Bolezney – Diagnosis and Therapy of Some Oncological Diseases –, Moscow, 1967) explain the increased sensitivity
2/3

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USSR

DEGEN, I. L., Klinicheskaya Khirurgiya, No 3, Mar 71, pp 75-79

of tumor cells to the action of magnetic fields by an increase in the conju-
gation of oxidation with phosphorylation, while the extent of free oxidation
that is not associated with phosphorylation is reduced. As a result, the
plastid metabolism of tumor cells is inhibited. It was observed that exposure
of animals to the action of a magnetic field protected them from the toxic
effect of the antitumor drug endoxan (cyclophosphamide) administered intra-
venously in lethal doses.

3/3

USSR

UDC 612.115:38:616.151.5-073.96

DEGEN, I. L., Candidate of Medical Sciences, and POTASHNIK, V. Ya., Kiev

"Change in Blood Coagulation Time in a Constant Magnetic Field"

Kiev, Vrachebnoye Delo, No 7, Jul 70, pp 45-46

Abstract: An in vitro study was made of coagulation of blood taken from 65 healthy and sick persons exposed to a constant magnetic field (1,500 oersted). Coagulation was accelerated in 47 cases (72.3), retarded in 14 (21.5,), and unchanged in 4 (6.2%). No correlation was noted between changes in coagulation and such factors as age, sex, ESR, or quantity and quality of elements formed. No differences were noted between the coagulation of blood taken from healthy persons and that of blood from sick persons all of whom were being treated on an ambulatory basis).

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USSR

DEGEN, I. L.

"Mechanism of the Action of Magnetic Fields on Biological Systems"

Kiev, Vestnik Akademii Nauk Ukrainskoy SSR, No 10, Oct 70, pp 39-43

Abstract: Magnetic fields are known to exert a therapeutic effect in bursities, epicondylitis of the humerus, radial styloiditis, and stenosis-producing ligamentitis of the transverse ligaments of the fingers. They are also effective in the treatment of keloid scars and of Dupuytren's contracture. A study was conducted of the effects of magnetic fields on 150 healthy subjects using ergography. The results showed that an action other than that which could be ascribed to generation of an electromotive force was exerted. Ergograms of the activity of forearm muscles indicated that the number of contractions in three recordings interrupted by 5 minute rest periods decreased from recording to recording without a magnetic field, increased during the third recording during application of an alternating magnetic field of 530 oe or a constant magnetic field of 450 oe, and decreased, just as without a magnetic field, when the magnetic field was applied briefly at the end of the second rest period. In experiments in
1/2

USSR

DEGEN, I. L., Vestnik Akademii Nauk Ukrainskoy SSR, No 10, Oct 70, pp 39-43

which the blood flow in the forearm was interrupted by application of a
Riva-Rocci cuff during the rest periods, the number of contractions under
the effect of a permanent magnetic field increased during the third record-
ing. Under these conditions, electromotive force of significant potential
was not induced by the magnetic field, so that its stimulating effect on
muscle contractions could not be ascribed to this type of action.

2/2

USSR

UDC: 616-005.98-02:617-001-085.849.11

DEGEN, I. L., Candidate of Medical Sciences, Second Hospital, Pecherskiy Rayon, Kiev

"Treatment of Traumatic Edema With a Magnetic Field"

Moscow, Ortopediya, Travmatologiya i Protezirovaniye, No 11, 1970, pp 47-49

Abstract: A group of 25 patients with edemas lasting from 1 month to 3 years and that had developed as a complication associated with fractures of bones in the arms and legs were exposed to a constant or low-frequency alternating magnetic field (450 to 530 oersteds) in 20 sessions of 15 minutes each. By the 20th session, the edema had disappeared in 18 of the patients and had decreased markedly in six. Neither an intercurrent disease nor the presence of a metal pin in the bone is a contraindication for the procedure. It can also be used when the fractured bone is still in a cast.

1/1

USSR

BALONOV, L. Ya. and DEGLIN, V. L., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, USSR Academy of Sciences, Leningrad

"Thresholds of Detection of Tonal Signals of Varying Durations During Transient Depression of One or Both Cerebral Hemispheres in Man"

Abstract: Auditory thresholds were investigated for patients being treated for spasmodic attacks, after a bilateral or unilateral attack had been precipitated with an electrical current. Within 10 to 30 minutes after a bilateral attack a bilateral increase in absolute auditory threshold was observed for signals of all durations, while after a unilateral attack the threshold was increased only on the contralateral side and only for tones of shorter durations. After 30 to 50 minutes a uniform decrease in threshold was seen for bilateral attacks, while for unilateral attacks the decrease was greater for long tones. The bilateral threshold increase after bilateral attacks is said to be determined by a bilateral functional depression of the subcortical and cortical parts of the auditory system. Unilateral results
1/2

USSR

BALONOV, L. Ya. and DEGLIN, V. L., Zhurnal Vysshey Nervnoy Deyatel'nosti
imeni I. P. Pavlov, Vol 23, Vyp 5, Sep/Oct 73, pp 1080-1082

are considered connected to depression of the projected zone of the contra-
lateral hemisphere. Threshold lowering is suggested to be due to intensi-
fication of the activity influence of the nonspecific thalamic nucleus.

2/2

Abstract: A total of 132 adult rats were exposed to an ambient temperature of 50°C for 10-15 min until they developed convulsions, at which time their internal body temperature was about 41°C (control 37.3). In animals which are sacrificed immediately, ascorbic acid (AA) concentration in the adrenal cortex was 373 mg% (control 403), ACTH concentration in the hyophysis was 12.4 milliunits (control 19.8), and the activity of the corticotropin implementing factor (CTIF) in the hypothalamus was 85 mg% (control 125). The other rats were kept at normal room temperature (18-20°C) for 1 hr. In those which survived that hour, AA conc. was 300 mg%, ACTH conc. was 5-8 milliunits, and CTIF activity was 43 mg%. In the rats which died within that hour, AA conc. was 327, ACTH conc. was 9.9, and CTIF activity was 64. The findings indicate that the functional activity of the hypothalamo-adenohypophyseo-adrenal system increases during exogenous hyperthermia. The magnitude of this response, jointly with other factors, determines the animal's resistance to hyperthermia.
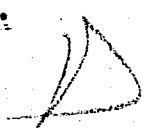
1/1

1/2   015
TITLE--REACTIONS OF EXCITED PROPYL RADICALS DURING GAS PHASE PROPYL IODIDE PHOTOLYSIS -U-

UNCLASSIFIED   PROCESSING DATE--11SEP70

AUTHOR--DZANTIYEV, B.G., DEGTEREV, I.A., SHVEDCHIKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 188-90

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL DECOMPOSITION, FREE RADICAL, IODINATED ORGANIC COMPOUND, PROPANE, PHOTOLYSIS, ETHYLENE, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1051

STEP NO--UR/0456/70/004/002/0133/0190

CIRC ACCESSION NO--AP0104449

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF H SPLITTING BY
EXCITED PR RADICALS AND THEIR DECOMPN. IN THE GASEOUS PHASE WAS STUDIED
BY PHOTOLYSIS OF VAPORS OF PRI USING A HG LAMP OF THE PRK TYPE. THE
PRINCIPAL PRODUCTS OF PHOTOLYSIS OF PRI IN THE GASEOUS PHASE WERE C SUB3
H SUB6 AND C SUB2 H SUB4. THE C SUB3 H SUB8 YIELD IS LESS THAN OR EQUAL
TO 10PERCENT OF THE OLEFINS. WITH INCREASING PRESSURE THE OLEFIN YIELDS
INCREASE LINEARLY BUT ABOVE 4 MM THEY DEPEND LITTLE ON PRESSURE. IN THE
PRESENCE OF HCL AND HI THE C SUB3 H SUB8 YIELD INCREASES BY FACTORS OF
10 AND 20, RESP. WITH ADDN. OF N THE YIELDS OF C SUB3 H SUB8 AND C SUB2
H SUB4 DECREASE. THE INCREASE IN THE C SUB3 H SUB8 YEILD IN THE
PHOTOLYSIS OF THE MIXTS. OF PRI WITH HI AND HCL IS DUE TO THE FACT THAT
THE SPLITTING OF H FROM HX BY THE REACTION C SUB3 H SUB7 PLUS HX YIELDS
C SUB3 H SUB8 PLUS X IS EASIER THAN BY THE REACTION C SUB3 H SYB7 PLUS
PRI YIELDS C SUB3 H SUB8 PLUS C SUB3 H SUB6 I.

UNCLASSIFIED

Coatings

DEGTEV, G. F., SOLOV'YEV, B. M., VASHKEVICH, F. F., MATVEYEV, O. R.

"Study of Some Oxidation-Resistant Coatings Obtained by the Plasma Deposition Method"

Abstract: A study was made of the possibility of using plentiful and inexpensive materials to protect the steel elements of industrial heat exchangers. Oxidation-resistant coatings of aluminum oxide, magnesium oxide, zirconium dioxide, silicon carbide, and tungsten carbide were applied to specimens made of St. 3 carbon steel and Kh18N9T oxidation-resistant steel. The coatings were tested independently and in combination with each other. Various conditions of plasma deposition of the coatings were tested. The best results were obtained on applying aluminum oxide, aluminum-magnesia spinel, and silicon carbide to carbon steel with a sublayer of iron.

1/1

UDC 541.15

USSR

BOL'SHAKOVA, S. I., SHASHKOV, A. S., DEGTEVA, T. G., KUZ'MINSKIY, A. S.,
Scientific Research Institute of Rubber Industry, Moscow

"NMR-Study of Structural Changes in Rubber During Low-Temperature Radiolysis"

Moscow, Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71, pp 361-362

Abstract: An attempt was made to determine the radiolysis and ion excitation effects of primary reactions occurring during the irradiation and of those of the stabilized portion of active forms which disappear when molecular mobility is restored in the β- or γ-relaxation area. The nuclear magnetic resonance (NMR) method was used to ascertain chemical changes in butadiene-nitrile rubber during low-temperature radiolysis, using a JNM-3 spectrometer at a maximum of 35 Mrad. One table and one figure are used to illustrate the formation of additional chemical bonds leading to closer packing of macro-molecules when the test rubber was brought back to room temperature, thus changing the properties of the material.

1/1

TITLE--THERMAL BREAKDOWN OF SULFUR POLYCHLOROPRENES -U-

AUTHOR-(04)-TAMARKIN, V.F., DEGTEVA, T.G., TIKHONOVA, S.V., KUZMINSKIY,
A.S.
COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 11-13

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMAL DEGRADATION, POLYCHLOROPRENE, MECHANICAL FAILURE,
   ACTIVATION ENERGY, GEL, SULFIDE, CARBON DIOXIDE, CARBON
   DISULFIDE/(U)NAIRIT A POLYCHLOROPRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0454   STEP NO--UR/0138/70/029/003/0011/0013

CIRC ACCESSION NO--AP0119390
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0119390

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEATING IN VACUO OF NAIRIT A
(S-CONTG. POLYCHLOROPRENE) (I) IS EQUIV. TO ITS THERMOMECH. DESTRUCTION,
SUCH AS DURING ROLLING. IT CAUSES EVOLUTION OF CS SUB2, COS, AND CO
SUB2 DUE TO BREAKING UP OF I POLYSULFIDE BRIDGES AND THE INTERACTION OF
THE RADICALS FORMED WITH O. IN THE 110-50DEGREES RANGE, THE ACTIVATION
ENERGY OF I GEL BREAKING IS SIMILAR TO 15 KCAL-MOLE.   THE GEL FRACTION
CONTENT OF I DECREASES DURING HEATING; AT FIRST IT RAPIDLY INCREASES DUE
TO THE FORMATION OF A NEW GEL FRACTION. THE PRESECNE OF ALK. SUBSTANCES
IN I INCREASES THE RATE OF GEL DECOMPN. THE DECOMPN. OF I MACROMOLS. IS
ACCELERATED BY THIURAM AS SHOWN BY THE INCREASE CO SUB2 AND COS
EVOLUTION IN ITS PRESENCE.   FACILITY: NAUCH.-ISSLED. INST.
REZIN. PROM., MOSCOW, USSR.

UNCLASSIFIED

A PO 010347

UR 0402

EXPERIENCE IN PRODUCTION OF ADENOVIRUS PREPARATIONS

V. I. Kvitash, V. I. Degtyarenko, V. I. Smirnova

Summary

Experiments in 74 guinea-pigs demonstrated that after immunization of the animals with adenoviruses type 6 purified with Freon-113 and concentrated by sedimentation with aluminium hydroxide the level of formed specific antibody was statistically significantly lower than that produced after immunization with the native antigen. Immunization with purified adenoviruses did not lead to reduction in the level of nonspecific antitissue antibody and the rate of their appearance.

19560889

TITLE--EFFECT SOME TECHNOLOGICAL PARAMETERS ON THE PROPERTIES OF CORUNDUM
   REFRACTORIES -U-

AUTHOR-(03)-KAYNARSKIY, I.S., DEGTVAREVA, E.V., KABAKOVA, I.I.

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(2), 46-54

DATE PUBLISHED-------70

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

TOPIC TAGS--REFRACTORY MATERIAL, BLAST FURNACE, GRAIN SIZE, CORUNDUM
   REFRACTORY, TITANIUM OXIDE, POROSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1805
                                STEP NO--UR/0131/70/035/002/0046/0054
CIRC ACCESSION NO--AP0118772
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0118772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE FOLLOWING
FACTORS WAS STUDIED: (1) TEMP. OF FIRING OF THE RAW GROG; (2) ADDN. OF
TIO SUB2 TO THE MIXT.; (3) GRAIN COMPN. OF THE GROG, (4) THE RATIO
GRAINY GROG: POWD. GROG (AS BINDER) ON THE D., STRENGTH, AND CREEP OF
SINTERED CORUNDUM REFRACTORIES. BY DECREASING THE FIRING TEMP. OF THE
RAW GROG FROM 1700 TO 1300DEGREES ITS POROSITY INCREASES, BUT THE
POROSITY OF PRODUCTS, PREPD. FROM THE GROG, INCREASES. THE EFFECT OF
THE GRAIN COMPN. IS RELATED WITH THE D. OF PACKAGING OF THE GRAINS.
BEST RESULTS ARE OBTAINED WITH A MIXT. OF 45-65PERCENT COARSE GRAINS, IS
SMALLER THAN 10PERCENT GRAINS OF MEDIUM SIZE, AND THE REST BINDER,
CONSISTING OF FINE GROG POWDER. VARIATION OF THE SIZE OF THE COARSE
GRAINS HAS LESS EFFECT THAN A VARIATION OF THE AMT. OF BINDER. DECREASE
OF THE ANNEALING TEMP. OF THE RAW GROG LEADS TO AN INCREASE OF
SHRINKAGE. THE SUBSTITUTION OF BURNED GROG BY UNBURNED GROG AS BINDER
DOES NOT GIVE SATISFACTORY RESULTS, AND LEADS TO A DECREASE OF THE LIMIT
OF SOLIDITY UNDER LOAD. ADDN. OF 0.5PERCENT TIO SUB2 DECREASES THE
POROSITY AND INCREASES THE APPARENT D. OF GROG, OBTAINED BY FIRING AT
1300-1500DEGREES, BUT ITS D. IS SMALLER THAN THAT OF GROG WITHOUT TIO
SUB2, BUT FIRED AT 1750DEGREES. ADDN. OF TIO SUB2 DECREASES THE
COMPRESSIVE STRENGTH BY INCREASE OF THE CORUNDUM CRYSTALS. ADDN. OF TIO
SUB2 ALSO DECREASES THE SHRINKAGE DURING SINTERING, AND AT THE SAME TIME
DIMINISHES THE STRENGTH OF THE SINTERED OBJECTS. VARIATION OF THE
FIRING TEMP. OF THE RAW GROG FROM 1300 TO 1750DEGREES DOES NOT EFFECT
THE CREEP OF THE OBJECTS, SINTERED THEREFROM AT 1700DEGREES FOR 8 HR.

UNCLASSIFIED

CIRC ACCESSION NO--AP0118772

ABSTRACT/EXTRACT--SMALL TIO SUB2 ADDNS. DECREASE THE CREEP OF REFRACTORIES, PREPD. FROM GROG, FIRED AT 1300-1500DEGREES, AS A CONSEQUENCE OF A MORE INTENSIVE RECRYSTN. A DECREASE OF THE FIRED TEMP. OF CORUNDUM OBJECTS INCREASES THEIR CREEP. FORMULATIONS ARE GIVEN FOR THE PREPN. OF OBJECTS WITH SMALLER THAN 2, 2.1-5, 5.1-9, 81.-12, 12.1-18, AND GREATER THAN 18PERCENT POROSITY. THE SINTERED CORUNDUM REFRACTORIES CAN BE USED IN AIR HEATED BLAST FURNACES.   FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOR., KHARKOV, USSR.

UNCLASSIFIED

USSR   UDC   621.319.4

ALFEROV, A. S., KUSHNIR, F. V., AL'FTAN, E. A., KIBENKO, V. D., VASIL'-
YEV, V. V., DEGTYAR', L. E., SOLOMENCHUK, L. K., TSAYFER, K. M., ZELI-
KOVSKIY, Z. I., Leningrad Electrical Engineering Institute of Communi-
cations imeni Professor M. A. Bonch-Bruyevich
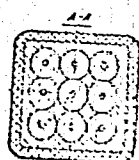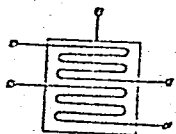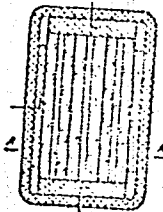
"An Electrical Device"

Translation: This Author's Certificate introduces an electrical device
which contains a resistor and a capacitor. The device is made in the
form of a stack of sections of microwire and insulation coated with a
current-conducting layer, and is equipped with an output. As a distin-
guishing feature of the patent, in order to reduce the natural resistance
and inductance of the capacitor, improve the technological feasibility
of the design and reduce cost, the ends of each section of wire are con-
nected to different leads, which may be two or more in number.

1/2

ALFEROV, A. S. et al., USSR Author's Certificate No 311301

2/2

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USSR

GALKIN, A. A., Academician of the Academy of Sciences of the Ukrainian SSR, DEGTYAR', YE. P., ZHEVAGO, S. YE., and POPOVICH, A. I., Donets Physico-Technical Institute of the Academy of Sciences of the Ukrainian SSR

"The Fermi Surface of Arsenic under Pressure"

Abstract: The authors study the behavior of the giant quantum oscillations and the ordinary quantum oscillations of ultrasonic wave absorption in arsenic at various pressures. Giant quantum oscillations in arsenic are realized on the fine γ -neck of a hole-type Fermi surface proposed by P. J. Lin and L. M. Falicov. The following are considered: 1) the coefficient of sound absorption α in a magnetic field at -0, 2,   4, and 6 kilobars and 2) dependence of the period of oscillation of the sound absorption coefficient on pressure. The results show that when the spin-orbital disintegration becomes sufficient to satisfy the $\lambda < 2(E_c - E_f)$ condition, where E is the energy of degeneration and E_f is Fermi energy, hole-type γ -necks disappear. This was observed by the authors with respect to the disappearance of giant quantum oscillations above 3 kilobars. Original article: three figures and seven bibliographic entries.

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UDC 621.357:621.79.027

DEGTYARENKO, A. G.

"Regulation of Electrochemical Dimensional Machining of Materials in a Circulating Electrolyte"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 15-21 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L299)

Translation: As a result of experimental and theoretical research, recommendations are made with respect to determining the process parameters of electrochemical machining, to create stable conditions. From the equations obtained, the required flow rate of the electrolyte in the electrode gap to exclude overheating, the required piezometric pressure for the corresponding decrease in volume of the gas phase to exclude separation of the electrolyte flow from the surface of the electrode and to exclude the phenomenon of instability of self-regulation are determined. The final selection of the required piezometric pressure in the electrode gap is made from the maximum calculated value. In order to create conditions under which the piezometric pressure will be higher than the critical pressure, it is recommended that the electrochemical machining process be carried out using a closed operating chamber having a supplementary regulated supply of electrolyte in addition to the electrode gap.

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UDC:622.7:321.9.004

USSR

AKOPOVA, K. S., DOKSHINA, I. D., TYUTYUNNIK, N. D., YAKUBOVICH, I. A.,
ZADOROZHNYY, V. G., BELOGAY, P. D., DEGTYARENKO, A. V., TISHCHENKO, A. G.

"Use of Ultrasound in Enrichment of Titanium-Zirconium Deposits"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 86-89

Abstract: A method has been developed for application of acoustical oscil-
lations to minerals to change their surface properties before enrichment.
This article presents results of an investigation of the influence of
ultrasonics on the minerals in titanium-zirconium placer deposits. It
has been established that 1-3 minutes action of ultrasound at 20 Khz and
an intensity of 3.8 W/cm^2 greatly activates the flotation of minerals by
the flotation oil. The yield of minerals in the foam product increases
as follows: zirconium from 18.6 to 98.9%, rutile from 3.0 to 97.5%,
ilmenite from 0 to 94%, staurolite from 0 to 90%. The expenditure of
collectors is also reduced and the flotation properties of minerals from
different deposits are made more similar.

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TITLE--INDIUM SESQUISULFIDE,NICKEL MONOSULFIDE SYSTEM -U-

AUTHOR-(03)-DEGTYARENKO, N.M., CHAUS, I.S., SHEKA, I.A.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 50-100 MOLE PERCENT In_2S_3, THE In_2S_3-NIS SYSTEM FORMS SOLID SOLNS. AT NIS:In_2S_3 RATIOS OF 1 AND 3, THE BINARY SULFIDE NIIN In_2S_4, M. 1040PERCENT, AND 3 NIS. In_2S_3, M. 1070DEGREES, ARE FORMED.

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USSR

BYKOVSKIY, YU. A., DEGTYAREV, V. G., DEGTYARENKO, N. N., YELESIN, V. F, LAPTEV,
I. D., NEVOLIN, V. N., Moscow Engineering-Physics Institute

"Kinetic Energies of Laser Plasma Ions"

Abstract: The mass-spectrometric method was used to study the ion composition
and distribution of ions with different z with respect to energy in the last
stage of dispersion of a substance. A transit time mass-spectrometer with an
electrostatic analyzer was used in the experiments. A study was made of the
maximum energy of the ions E_{max} of a laser plasma as a function of the radiation
flux density in the range of $q \sim 10^8\text{-}10^{11}$ watts/cm^2. The value of E_{max} was
obtained as a function of the ion mass. The domain of weak dependence of $E_{max} =$
$= f(q)$ was detected in the $10^8\text{-}10^9$ watts/cm^2 range. The integral spectrum
was determined by the energy distributions of the ions with different charge.
Values obtained for q_1, q_2 (the flux densities) and $\gamma_i, \alpha, \alpha_1$ ($\text{n} \sim q^\alpha$ where n is
the total number of charged particles and $E_{max} \sim q^{\gamma_i}$) are tabulated for Be,
Al, Ti, Cu, Nb and W. For bismuth with a flux density of $10^8 \leq q \leq 10^{11}$
watts/cm^2, no region of weak dependence of $E_{max} = f(q)$ was detected. This

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BYKOVSKIY, YU. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

agees with the calculated values of q_1' and q_2' (the boundary values of the radiation flux density range of the gigantic laser pulse in which phase transition conditions exist).

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USSR

ASHMARIN, I. I., BYKOVSKIY, Yu. A., DEGTYARENKO, N. N.,
YELESIN, V. F., LARKIN, A. I., SIPAYLO, I. P., Moscow Physical
Engineering Institute

"Pulse Holography Study of Gas Breakdown in Front of a Laser
Beam"

Abstract: The paper is devoted to a study of phenomena which
take place in air and in helium at different pressures when
the output from a ruby laser is focused on lead, copper, and
aluminum targets. The method of pulse holography is used for
these purposes. The efficacy of the holographic method for
studying these phenomena is demonstrated. It is observed that
the axis of symmetry of the beam at atmospheric pressure
deviates from the normal to the target in the case of oblique
incidence of the laser beam. This effect can be attributed

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ASHMARIN, I. I. et al., Zhurnal Tekhnicheskoy Fiziki, No 11,
Nov 71, pp 2369-2377

to localized absorption of the energy of laser emission on
the boundary of the beam. It is found that the effect of the
laser beam on the probability of gas breakdown in front of
the target can be attributed to the ionizing action of ultra-
violet radiation. An investigation of the way that the mag-
nitude of the effect depends on the target material and the
composition of the ambient gas confirms this hypothesis.
The authors thank D. M. Samoylovich and R. V. Ryabov for
furnishing the photographic materials and for constructive
criticism. Nine figures, one table, bibliography of 14 titles.

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Luminescence

USSR   UDC 661.143(088.8)

KOKHANOV, B. T., DADAMYAN, Z. M., and DEGTYAREV, A. P.

"A Contact Suspension"

USSR Author's Certifictae No 342226, Division H, filed 20 Oct 69, published
13 Jul 72 (from RZh-Khimiya, No 16, 25 Aug 73, Abstract No 16L169 P by N. Sh.)

Translation: The invention relates to the production of electroluminescent
capacitors. A contact suspension has been developed which can be used to
make reliable contacts on brittle substrates without applying pressure, and
at 20°C. The initial components of the suspension are molecular silver, tin
abietinate, BF-4, cement and ethyl alcohol. The use of tin abietinate in the
suspension combined with the above mentioned components produces electrically
conductive junction contacts of aluminum film. The contacts can be made
according to the following procedure. The silver for the composition is
prepared from silver chloride by zinc reduction in a 20% H_2SO_4 solution
(0.3 g of zinc and 5 ml of H_2SO_4 per gram of silver chloride). The zinc is
is dissolved with agitation and heating. The resultant molecular silver is
washed, dried, and rubbed into a powder. The tin abietinate is prepared by
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KOKHANOV, B. T., et al., USSR Author's Certificate No 342226, Div H, filed 20 Oct 69, published 13 Jul 72

melting stannic oxide with rosin powder in a 2:1 ratio, rubbing the residue into a powder and dissolving it in alcohol. The makeup of the suspension is: molecular silver (4 wt.%), wthyl alcohol (the quantity depends on the required viscosity of the suspension), BF-4 cement (1 wt.%), and tin abietinate (1 wt.%). The components of the suspension are mixed in a hermetically sealed vessel and applied to a thin film of aluminum. After holding at 20°C for 2 hours, leads can be applied to a contact of the suspension by low-temperature soldering.

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