USSR

UDC: 629.78.015.076.8

VOYEYKOV, V. V., YAROSHEVSKIY, V. A.

"Determining the Amplitude of Oscillations of an Axisymmetric Space Vehicle During Uncontrolled Descent in the Atmosphere"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1970, 1, No 3, pp 45-55 (from RZh-Raketostroyeniye, No 1, Jan 71, Abstract No 1.41.77)

Translation: The authors consider the peculiarities of uncontrolled motion of a space vehicle about its center of mass during atmospheric descent. Particular attention is given to determining the possible amplitudes of oscillations and transverse loads on the descent trajectory for small initial angular velocities. Formulas and graphs are given for determining the indicated parameters. Seven illustrations, bibliography of eight titles. Resumé.

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1/2   035
UNCLASSIFIED
TITLE--TRAJECTORY CONTROL AT HYPERBOLIC ENTRY -U-   PROCESSING DATE--27NOV70

AUTHOR-(02)-KLIMIN, A.V., YAROSHEVSKY, V.A.

COUNTRY OF INFO--USSR

SOURCE--AUTOMATIC CONTROL IN SPACE, 3RD I F A C SYMPOSIUM, TOULOUSE,
    FRANCE, MARCH 2ND-6TH, 1970.
DATE PUBLISHED----MAR70

SUBJECT AREAS--SPACE TECHNOLOGY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--REENTRY TRAJECTORY, SPACECRAFT CONTROL, SPACECRAFT REENTRY
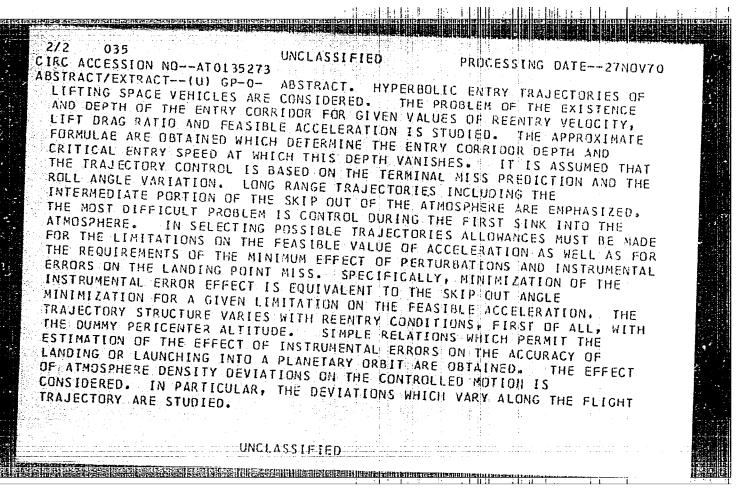   CONTROL, SYMPOSIUM, AUTOMATIC CONTROL CONFERENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1666
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CIRC ACCESSION NO--AT0135273
                        UNCLASSIFIED

2/2   035
CIRC ACCESSION NO--AT0135273   UNCLASSIFIED   PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYPERBOLIC ENTRY TRAJECTORIES OF
LIFTING SPACE VEHICLES ARE CONSIDERED. THE PROBLEM OF THE EXISTENCE
AND DEPTH OF THE ENTRY CORRIDOR FOR GIVEN VALUES OF REENTRY VELOCITY,
LIFT DRAG RATIO AND FEASIBLE ACCELERATION IS STUDIED. THE APPROXIMATE
FORMULAE ARE OBTAINED WHICH DETERMINE THE ENTRY CORRIDOR DEPTH AND
CRITICAL ENTRY SPEED AT WHICH THIS DEPTH VANISHES. IT IS ASSUMED THAT
THE TRAJECTORY CONTROL IS BASED ON THE TERMINAL MISS PREDICTION AND THE
ROLL ANGLE VARIATION. LONG RANGE TRAJECTORIES INCLUDING THE
INTERMEDIATE PORTION OF THE SKIP OUT OF THE ATMOSPHERE ARE EMPHASIZED,
THE MOST DIFFICULT PROBLEM IS CONTROL DURING THE FIRST SINK INTO THE
ATMOSPHERE. IN SELECTING POSSIBLE TRAJECTORIES ALLOWANCES MUST BE MADE
FOR THE LIMITATIONS ON THE FEASIBLE VALUE OF ACCELERATION AS WELL AS FOR
THE REQUIREMENTS OF THE MINIMUM EFFECT OF PERTURBATIONS AND INSTRUMENTAL
ERRORS ON THE LANDING POINT MISS. SPECIFICALLY, MINIMIZATION OF THE
INSTRUMENTAL ERROR EFFECT IS EQUIVALENT TO THE SKIP OUT ANGLE
MINIMIZATION FOR A GIVEN LIMITATION ON THE FEASIBLE ACCELERATION. THE
TRAJECTORY STRUCTURE VARIES WITH REENTRY CONDITIONS, FIRST OF ALL, WITH
THE DUMMY PERICENTER ALTITUDE. SIMPLE RELATIONS WHICH PERMIT THE
ESTIMATION OF THE EFFECT OF INSTRUMENTAL ERRORS ON THE ACCURACY OF
LANDING OR LAUNCHING INTO A PLANETARY ORBIT ARE OBTAINED. THE EFFECT
OF ATMOSPHERE DENSITY DEVIATIONS ON THE CONTROLLED MOTION IS
CONSIDERED. IN PARTICULAR, THE DEVIATIONS WHICH VARY ALONG THE FLIGHT
TRAJECTORY ARE STUDIED.

UNCLASSIFIED

USSR

UDC 629.19:533.6

VOYEYKOV, V. V., YAROSHEVSKIY, V. A.

"On the Probability of the Stabilization of a Body of Rotation at Large Angles of Attack Upon Descent in the Atmosphere"

Translation: The problem of determining the probability of stabilization of a body of rotation at large or small angles of attack during uncontrolled descent in the atmosphere is discussed. The moment characteristics of the body of rotation ensure stable balancing at $\alpha = 0$ and $180°$. Two limiting cases are considered: small initial angular velocities (where the solution is trivial) and large angular velocities. The results of the study are compared with the results of numerical calculations for plane motion. Resume.

1/1

15

YAROSHINSKIY, I. S., STUKANOGOV, G. A., BEKI, J., Kiev Higher Aviation Engineer-
ing Military School

"Method of Separating the Anode Film from the Surface of Aluminum Alloy"

Abstract: A study was made of the effect of ethyl bromide on the corrosion
cracking of D16AT alloy. A method and a device are described for separating
the thin-layer anodic film from the surface of this alloy. The anodic film
entirely located in the pure aluminum cladding layer 60-62 microns thick was
separated in a glass device. The specimen was dropped in a 220-250 ml cylinder
the ends of which were free of metal containing 100-120 ml of ethyl bromide.
The alloy begins to experience noticeable corrosive solution after 20-22 hours
of heating (not exceeding 40° C in view of the boiling point of ethyl bromide),
and it dissolves completely after 30-38 hours. The corrosion products are
stored for later use of the catalyst which reduces the separation time to 12-
16 hours. Films 60-80 microns thick with an area of 20 cm^2 were separated.
The method is applicable for separation of thick-layer anodic films from the
surfaces of D1AK6, AMTs, and AMG aluminum alloys.

1/1

- 55 -

USSR   UDC:536.468

KHOMYAK, Ye., YAROSINSKIY, Yu., Warsaw,

"Use of Measurements of Ionization Current for Determination of Turbulent
Flame Structure"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 390-400

Abstract: A transducer is suggested for local measurement of the ionization
current in a turbulent flame. The signal of the transducer depends linearly
on the concentration of ions at the boundary layer of the measuring element
of the transducer. The magnitude of the signal depends on the velocity
of movement of the gas and the temperature of the measuring element. Analy-
sis of the nature of the signal produced in a homogeneous laminar flame, a
turbulent flame and the deep zone of a turbulent flame indicates that
where the flame is actually turbulent, the method is qualitative in nature.
The method is suitable for study of the flame front in a stable flow when
the measuring element of the transducer is not heated, and pressure pulsa-
tions are slight.
1/1

USSR

UDC 77

LYLIKOV, K. S., YAROSLAVSKAYA, N. N., GOVORKOV, L. P.

"Certain Features of the Stabilization of Ammonialess High-Dispersion Emulsions"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 97-103 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1328)

Translation: In the development of especially high dispersion, homogeneous ammonialess emulsions of the EVR-1000 type ($d = 0.03$ µ), there arose the question of its stabilization. A basic difficulty in the stabilization of such an emulsion is in preventing the recrystallization of the emulsion and the appearance of bidispersion of microcrystals associated with it. In the absence of sta-salt the most considerable concentration of bromide (pBr = 6.4) in thermostatically controlled aging of the emulsion was sufficient for the rise of bidispersion, and its rise was accompanied by a sharp change in the photographic properties (a drop in gamma and a rise in light sensitivity). The introduction of $2.61 \cdot 10^{-5}$ mole of sta-salt per liter of emulsion fully stopped recrystallization even for a considerable concentration of bromide. The concentration of bromide that is
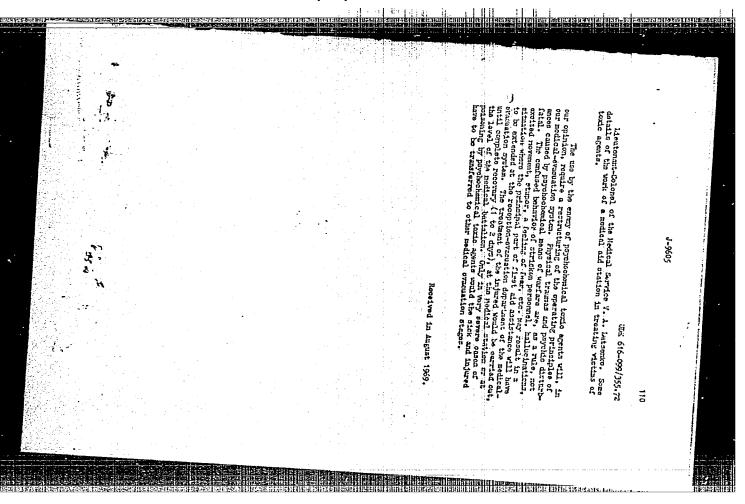
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USSR

optimal from the aspect of maintaining photographic properties for the indicated concentration of sta-salt is $2 \cdot 10^{-3}$ mole/l, with a final value of 3.8-4.0 for the pBr of the emulsion values apply to the panchromatically sensitized variety of the emulsion investigated. As concerns the latter, also investigated was the stabilizing effect of antioxydants pyrocatechin, α-naphthol, which gave doubly negative results, however. Authors abstract.

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YAROSLAVSKIY, A. P.

Medicine

So: Military Medical Journal   N; 1995   UDK 612.398.131/.132:616.21

109

J-9605

Candidate of Medical Sciences, Lieutenant-Colonel of the Medical Service, A. P. Yaroslavskiy, O. P. Tcokur. Changes in the protein fractions of the blood in certain otorhinolaryngological diseases.

To study the albumin fractions in the blood of patients suffering from otorhinolaryngological diseases, we determined their phonograms (with the aid of the generally accepted method of electrophoresis on paper) both before and after treatment. Accepted as the average normal values were the following indicators: total protein: 6 - 8 g%/percent; albumin -- 60.7 ± 2.5 percent; globulins: total protein; 6 - 8 g%/percent; a_1 -- 6.5 ± 1.9 percent, a_2 -- 5.2 ± 1.6 percent, β -- 11.4 ± 1.7 percent, and γ -- 16.2 ± 2.6 percent. The proteinogram of 60 patients were examined, in the case of 15 of them, acute sinusitis was diagnosed, 17 had chronic sinusitis, 7 suffered from a purulent inflammation of the middle ear, and 21 had chronic tonsillitis.

The most dependable changes (from 5 to 25 percent) in serum proteins can be found in the case of patients with purulence of the accessory sinuses of the nose. There changes are characterized by a lowering of the albumin fraction and an increase in the globulin fractions. In cases of acute sinusitis, it is generally only the a-globulin fraction which increases (on the average, by from 4 to 5 percent), while in chronic sinusitis there is a 2 to 5 percent increase in the a_1, a_2 and γ.

This fact can be used in differential diagnosis to distinguish chronic sinusitis from its acute form.

Examination of the phoregram of patients with chronic tonsillitis showed a lowering of the albumin content (by 6 to 8 percent), an increase in γ-globulins (from 4 to 7 percent), and a slight increase in a_1 and -- especially -- in a_2 globulins (from 1 to 3 percent).

It should be noted that the a_2 and γ-globulin content remained high even after tonsillectomy, while the general protein deficit was reduced.

In patients with a chronic purulent inflammation of the middle ear, the phoregrams show very insignificant changes consisting of some lowering of the albumin content (from 2 to 6 percent) and, in a number of cases, an increase in a_1, a_2 and γ-globulins (from 1 to 2 percent).

Received in October 1969.

UDC 616-099/355.72

Lieutenant-Colonel of the Medical Service V. A. Lutsenko. Some
details of the work of a medical aid station in treating victims of
toxic agents.

The use by the enemy of psychochemical toxic agents will, in
our opinion, require a restructuring of the operating principles of
our medical-evacuation system. Physical trauma and psychic disturb-
ances caused by psychochemical means of warfare are, as a rule, not
fatal. The confused behavior of stricken personnel, hallucinations,
excited movements, stupor, a feeling of fear, etc. may result in a
situation where the principal part of first aid assistance will have
to be extended at the reception part of the medical-
evacuation system. The treatment of the injured would be carried out
until complete recovery (1 to 2 days), at the medical station or at
the level of the medical battalion. Only in very severe cases of
poisoning by psychochemical toxic agents would the sick and injured
have to be transferred to other medical evacuation stages.

J-9605

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Received in August 1969.

USSR

YAROSLAVSKIY, L. P.

"Precision and Reliability in Measuring the Position of a Two-Dimensional Object on a Plane"

Abstract: The author considers the problem of determining the planar position of a two-dimensional object observed against a background of extraneous objects and Gaussian interference. A criterion is formulated for the weighted mean-square measurement error together with an optimum rule of measurement. Relations are derived for calculating the weighted mean-square error when the spectrum of the object is known as well as the intensity of interference. Relations are found for the probability of false identification of some object with an extraneous object. For special cases where the number of extraneous objects is great, conditions are formulated which must be satisfied to keep this probability low.

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USSR

KRONROD, M. A., MERZLYAKOV, N. S., and YAROSLAVSKIY, L. P.

"Experiment in Hologram Reproduction Using Computers"

Abstract: The authors, members of IPPI (Institute of Information Transmission Problems) of the USSR Academy of Sciences, conducted an experiment on the Minsk-22 digital computer for the purpose of reproducing the image of an object from its hologram developed from a Fourier system. The results of this experiment, described as the first step in the use of a computer for this purpose, are given in the present paper. A hologram made in the A. F. Ioffe Physico-technical Institute was used in the experiment for the purpose of investigating the possibility of transmitting holograms over a phototelegraphic channel. The basic stages of the experiment are outlined, and three photographs showing an original hologram, its reproduction through the use of the computer, and its reproduction by laser are obtained. The authors note that the whole reproduc-tion procedure using the computer takes about six hours of machine time on the Minsk-22.

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USSR

ATAKHONOV, R. M., LEBEDEV, D. S., and YAROSLAVSKIY, L. P.

UDC 621.391.828:621.397.62

"Pulse Noise Suppression in a Television Receiver"

Moscow, Tekhnika kino i televideniya, No. 7, 1971, pp 55-57

Abstract: The noise dealt with in this article originates either in industrial appliances or in the receiver itself, and is manifested as chaotic pulses of random amplitude and of the duration of one scanning element. The authors obtain an algorithm for the filtration of the noise on the basis of the radical difference between the nature of the pulse noise and of the image signal. This algorithm is found by using the theory of statistical solutions if the a posteriori distribution of the transmitted image and the form of the function for the losses connected with the difference between the transmitted and reproduced images are known. The distribution of the difference between the video signal for a given element of the image and its value predicted for the surrounding elements is taken as the a posteriori distribution value. On the basis of the obtained algorithm, a filtration system is worked out and its block diagram given. It was developed in transistorized form, in 20 stages, and tested; the results of the test are shown in the form of contrasted photographs of television images with and without the filter.
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USSR

YAROSLAVSKIY, L. P.

UDC: 621.391:621.376

"On One Possibility of Reducing the Threshold Signal-to-Noise Ratio When Nonlinear Modulation Methods Are Used"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference- -Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 176-181 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A94)

Translation: The author considers the possibility of reducing the threshold of FM, PTM and PCM demodulators by nonlinear filtration of anomalous errors. A filtration algorithm is derived which is optimum with respect to the cri- terion of maximum a posteriori probability. Data are given from an experi- mental check on the effectiveness of the algorithm for the case of image transmission. Resumé.

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1/2   020   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--PIEZOELECTRICITY OF QUARTZ AND QUARTZ RESONATORS -U

AUTHOR-(02)-SMAGIN, A.G., YAROSLAVSKIY, M.I.

COUNTRY OF INFO--USSR

SOURCE--P'YEZOELEKTRICHESTVO KVARTSA I KVARTSEVYYE REZONATORY, MOSCOW,
  ENERGIYA, 1970, 488 PP (SL:2383)
DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--PIEZOELECTRICITY, RESONATOR, QUARTZ

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0029   STEP NO--UR/0000/70/000/000/0001/0488

CIRC ACCESSION NO--AM0133912
                             UNCLASSIFIED

CIRC ACCESSION NO--AM0133912
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
INTRODUCTION 5.   CHAPTER I SOME IDEAS OF APPLIED CRYSTALLOGRAPHY AND
CRYSTAL PHYSICS 9.   II MAJOR PHYSICAL PROPERTIES OF MONOCRYSTALLINE
QUARTZ 76.   III RESONANT OSCILLATIONS OF PIEZOELECTRIC ELEMENTS 95.
IV RADIOPHYSICAL CHARACTERISTICS OF OSCILLATING QUARTZ RESONATORS 136.
V MEASURING ELECTRICAL PARAMETERS AND CHARACTERISTICS OF RESONATORS
301.   VI QUARTZ RESONATOR AS COMPONENT OF ELECTRONIC SCHEME 338.   VII
DESIGN OF PIEZOELECTRIC COMPOENT OF QUARTZ RESONATOR 413.   LITERATURE
482.   THE BOOK WAS WRITTEN FOR A WIDE CIRCLE OF SCIENTIFIC WORKERS,
ENGINEERS AND TECHNICIANS, WORKING WITH THE PREPARATION AND APPLICATION
OF QUARTZ INSTRUMENTS, AND ALSO TEACHERS AND STUDENTS OF HIGHER
EDUCTIONAL INSTITUTIONS.

UNCLASSIFIED

USSR

UDC: 621.372.54

MOSTYAYEV, V. A., IVANOV, A. D., ABRAMOVICH, M. I., KUZIN, V. I., YAROSLAV-
SKIY, M. I.

"Low-Frequency Quartz Resonators With Vibrators Mounted by the Pressure
Welding Method With Indirect Pulse Heating"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiokomponenty (Electronic Technology.
Scientific and Technical Collection. Radio Components), 1970, vyp. 5, pp 26-30
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V381)

Translation: The authors consider parameters of low-frequency quartz reso-
nators with contour and bending vibrations in which the leads are fastened
to the piezoelectric elements by pressure welding with indirect pulse heating.
It is shown how these resonators have advantages over those in which the leads
are fastened to the piezoelectric elements by soft solder. Authors' abstract.

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USSR

BELYAKOVICH, E. I., GRUZINENKO, V. B., YAROSLAVSKIY, M. I.

UDC 621.373.421.13:621.372.412

"Problem of Tuning Quartz Resonators with Shear Oscillations with Respect to the Circuit"

Elektron. tekhnika. Nauchno-tekhn. sb. (Electronic Engineering. Scientific and Technical Collection), 1970, ser 9, vyp. 2, pp 96-98 (from RZh-Radio-tekhnika, No 9, Sep 70, Abstract No 9D276)

Translation: A procedure is recommended for adjusting the frequency of rectangular-shape piezoelements with various relations of the transverse dimensions insuring minimum variations of the equivalent parameters and frequency temperature characteristics. There are two illustrations and a three-entry bibliography.

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USSR

GRUZINENKO, V. B., DRUKKER, YU. M., YAROSLAVSKIY, M. I.

UDC 621.373.421.13:621.372.412(088.8)

"Piezoelectric Resonator"

Translation: This author's certificate introduces a piezoelectric resonator executed in the form of an ET or FT-cut quartz element equipped with a system of electrodes connected to wire leads. In order to improve the suppression of first-harmonic oscillations when separating oscillations at the second harmonic frequency, the system of electrodes is formed by rectangular electrodes arranged symmetrically on two sides of the quartz element, and the wire leads of all the electrodes are located on the diagonals of these electrodes at a distance of 0.33-0.34 of the length of the diagonals from the vertexes of the central angles, and they are connected to the stationary base. There are four illustrations.

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USSR

YAROSLAVSKIY, N. G.; et al

"Study of the Composition of a Plasma in the Discharge of a CO_2 Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii; October 1970, pp 712-4

ABSTRACT: A study is made of the dissociation of CO_2 in continuously operating and stationary lasers as a function of the composition of the working mixture, proton velocity, and pressure and force of the discharge in tubes of different diameters by a method of infrared absorption. Quantitative comparisons of the oscillation power with the CO_2 concentrations and the products of dissociation indicate a significant role played by the creation of a population inversion by means of the transfer of oscillation energy from CO. Curves for the variation of CO and CO_2 concentrations with time in a sealed-off laser are analyzed.
The article includes three illustrations. There are 9 references.

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Optical

USSR   535.853

YAROSLAVSKIY, N. G., NIKOLAYEVA, I. I.

"New Domestic Spectral Instruments and Prospects for Their Development"

Optiko-Mekhanicheskaya Promyshlennost', No. 4, 1970, pp 10-27.

Abstract: A number of spectral instruments recently introduced in the USSR are described. They include: apparatus for atomic emission spectral analysis in metallurgy, machine building and geology; apparatus for absorption analysis and measurement of reflection spectra used in chemistry, medicine, biology and agriculture; devices for spectral investigations over a broad range of wavelengths (from 2 millimicrons to 1000 microns), as well as high speed and interference spectral devices designed for usage in scientific research. The devices described indicate that by the end of 1970, the Soviet optical industry will be producing the major types of spectral devices used in the areas mentioned. During the next Five-Year Plan period (1971-1975) most of the main trends of development of spectral instruments will be in production in the Soviet Union. One of the main areas of development should be automation of spectral devices. Another important step during the next five years of development will be the usage of new interference methods and the creation of interference spectral devices with improved resolving capacity, light power, speed and reduced dimensions, requiring more

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USSR

YAROSLAVSKIY, N. G., NIKOLAYEVA, I. I., Optiko-Mekhanicheskaya Promyshlennost',
No 4, 1970, pp 10-27

complex electronic circuits. Among others, several high speed Fourier spectrome-
ters are to be produced for space and laboratory investigations, as well as small
spectrometers with selective amplitude modulation, which are quite effective for
physical and chemical investigations. Important problems remaining are further
expansion of the spectral area of instruments in the shortwave ultraviolet and
particularly in the longwave infrared areas of the spectrum; expansion of the
capabilities of existing and proposed spectral devices for the measurement of
objects under various conditions; and continuation of rapid development of optical
devices in general by the application of new techniques such as holographic and
heterodyne methods of spectroscopy using lasers.

2/2

UNCLASSIFIED

TITLE--THE EFFECT OF SOOT DUST ON THE MAXILLODENTAL SYSTEM (CLINICO EXPERIMENTAL RESEARCH) -U-

PROCESSING DATE--17JUL70

AUTHOR--SMOLYAR, N.YA., YAROSLAVSKIY, V.YE.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 1, PP 17-20

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MOUTH, INDUSTRIAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/0678

STEP NO--UR/0511/70/049/001/0017/0020

CIRC ACCESSION NO--AP0047183

UNCLASSIFIED

Acc. Nr: AP0047183

Ref. Code: UR 0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 17-20

Smolyar, M. Ya.: Yaroslavskiy, V. Ye. THE EFFECT OF SOOT DUST ON THE MAXILLODENTAL SYSTEM (CLINICO-EXPERIMENTAL RESEARCH)

Summary. The authors commits to paper the results of investigations of the state of the oral cavity in 300 workers of a soot plant and in 300 persons not engaged in shops with occupational noxious factors. In workers of the soot plant affections of the oral mucosa and parodontium occur 2—3 times more frequently than in the control group and depend on the length of the service record.

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REEL/FRAME

19790678

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USSR   UDC 621.357.1:669.3-492.2

GEYNRIKHO, K. YA., AYDAROV, R. ZH., SAPRYGIN, A. F., and YAROSLAVTSEV, A. S.

"Preparation of Copper Powders at High Velocities of Electrolyte Circulation"

Tr. In-ta organ. kataliza i elecktrokhimii. AN Kaz SSR (Proceedings of the
Institute of Organic Catalysts and Electrochemistry. Academy of Sciences
Kazakstan SSR), No 33, 1972, pp 37-42 (from Referativnyy Zhurnal -- Khimiya,
No 7, 1973, Abstract No 7L332)

Translation: It was determined that to prepare a copper powder in a circulating
electrolyzer the optimum conditions are as follows: the velocity of the
electrolyte flow must not be less than 2 m/sec, temperature of the solution
30-40°C, concentration of Cu in solution 1-8 g/ℓ . Under these conditions,
the D_k may attain $2\text{-}3 \times 10^4$ a/m^2.

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1/2   016

UNCLASSIFIED

TITLE--INDUSTRIAL ADOPTION OF THE HYDROSULFATIZING OF LEAD FILTER CAKE
WITH THE EXTRACTION OF ZINC, CADMIUM, AND INDIUM -U-

PROCESSING DATE--02OCT70

AUTHOR--YAROSLAVTSEV, A.S.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 17-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FILTRATION, EXTRACTIVE METALLURGY, ELECTROLYTIC SOLUTION, ZINC
COMPOUND, SULFATE, LEAD COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1923

STEP NO--UR/0136/70/043/002/0017/0020

CIRC ACCESSION NO--AP0108252

UNCLASSIFIED

CIRC ACCESSION NO--AP0108252   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A FLOWSHEET IS GIVEN FOR THE WET
TREATMENT OF WAELZ OXIDE WITH SPENT AN ELECTROLYTE, YIELDING AN IMPURE
ZNSO SUB4 SOLN. AND A PB FILTER CAKE. THE CAKE WAS TREATED WITH
ACIDIFIED SPENT ZN ELECTROLYTE FOR 8 HR AT 70-80DEGREES, SOLID LIQ.
EQUALS ONE FIFTH, AND ADDN OF MN ORE TO DECOMP. THE SULFIDES. THIS
TREATMENT RAISED THE PB CONCN. OF THE CAKE BY SIMILAR TO 6PERCENT AND
EXTD. 67-87PERCENT OF THE ZN, CD, CU, IN, AND FE, AND 38PERCENT OF THE
AS. THE TREATED CAKE CONTAINED PB 43.6, ZN 3.8, FE 1.0, AND CD PLUS CU
PLUS IN PLUS AS 0.36PERCENT.

UNCLASSIFIED

USSR

USC 620.179.1

YAROSLAVTSEV, O. I., MILAREV, L. D., PYATIGORSKIY, B. M., YURKIN, V. V., and GORLOV, V. M., Scientific Research Institute of Introscopy

"Standard Functional Units for a Block System for Nondestructive Testing"

Abstract: The first series of standardized functional units for block systems for nondestructive testing were developed and passed government tests at the Scientific Research Institute of Introscopy. The units were designed for completing apparatus of electromagnetic nondestructive quality control of products of the metallurgical and machine building industries and can be used in other apparatus. They were designed with all the require- ments of block systems of nondestructive testing in mind and are built on semiconductor elements. Seven illustrations, and one table.

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- 4 -

Communications

USSR   UDC: 621.37/.39(076)

BERG, A. I., BRENEV, I. V., YAROTSKIY, A. V.

"Radio Engineering, Electronics and Electrical Communications"

V sb. Mashinostroyeniye. Avtomat. upr. mashinami i sistemami mashin. Radio-
tekhn., elektronika i elektrosvyaz' (Machine Building. Automatic Control
of Machines and Machine Systems. Radio Engineering, Electronics and Electrical
Communications--collection of works), Moscow, "Nauka", 1970, pp 287-427
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A20)

Translation: The authors survey the history of the development of radio
and electrical communications, as well as the present state of radio elec-
tronics and electrical communications in the Soviet Union. A. K.

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USSR

KUZNETSOV, A. A., YAROTSKIY, V. N.

"Probabilistic Characteristics of Mechanical Properties of Certain Alloys at Elevated and Reduced Temperatures"

Zavodskaya Laboratoriya, No 3, 1971, pp 337-338.

ABSTRACT: The statistical characteristics of mechanical properties of steels were studied at -196 and +600°C. Unbiased estimates of the mathematical expectation and mean square deviation of the mechanical properties studied, their variation factors, boundaries of confidence intervals at 95% confidence level were produced. The data presented can be used in calculating the reliability of structures made of the alloys studied [Kh18N9, IKh18N9, and KhN60V] at the temperatures used.

1/1

1/2   026   UNCLASSIFIED   PROCESSING DATE--23OCT70

TITLE--USE OF A NEW LUBRICATING ADDITIVE FOR DRILLING MUDS DURING DIAMOND
    DRILLING OF GEOLOGICAL BOREHOLES -U-

AUTHOR-(05)-ZAYONTS, O.L., KOMAR, V.YA., PUKAS, A.I., YAROV, A.N., KENDIS,
    M.SH.

COUNTRY OF INFO--USSR

SOURCE--RAZVED. OKHR. NEDR 1970, 36(3), 37-40

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
    OCEANOGRAPHY, MATERIALS

TOPIC TAGS--LUBRICANT ADDITIVE, VEGETABLE OIL, LUBRICATING OIL, DRILLING
    MUD, DIAMOND, GEOLOGY, DRILLING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2068   STEP NO--UR/9083/70/036/003/0037/0040

CIRC ACCESSION NO--AP0127441
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127441
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TARS FROM SOAPSTOCKS OF BLACK
COTTONSEED OIL AND TECH. FATS (ACID NO. 130-200 MG KOH, MOL. WT.
475-522, D. 0.872) WERE USED IN AMTS. OF 2PERCENT AS LUBRICATING
ADDITIVES TO MUDS DURING DIAMOND DRILLING. THE RESULT WAS SIMILIAR TO
50PERCENT DECREASE IN SURFACE TENSION OF MUDS, SIMILIAR TO
100-200PERCENT INCREASE IN DRILLING RATE, AND SIMILIAR TO 35PERCENT
REDN. OF WEAR OF DIAMOND CROWNS.   FACILITY: TREST,
KIEVGEOLOGIYA, KIEV, USSR.

UNCLASSIFIED

1/2   017   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--LUBRICATING ADDITIVE FOR WASHING LIQUIDS -U-

AUTHOR-(05)-YAROV, A.N., KHARCHENKO, L.S., KENDIS, M.SH., GORDASH, YU.T.,
   ZHIDOVTSEV, N.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,988
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970.
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LUBRICATING OIL, CHEMICAL PATENT, LUBRICANT ADDITIVE,
   INDUSTRIAL WASTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1804   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130637
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0130637
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LUBRICATING ADDITIVE FOR WASHING
  LIQS. IS BASED ON OIL AND FAT INDUSTRY BY PRODUCTS, SUCH AS TAR OILS
  FROM BLACK COTTONSEED OIL SOAPSTOCK, TECH. FAT, OR THEIR MIXTS. TO
  IMPROVE THE LUBRICATING PROPERTIES OF THE ADDITIVE IN AN ALK. MEDIUM,
  THE OIL AND FAT WASTE PRODUCTS ARE TREATED WITH C SUB1-20 ALCS. IN THE
  PRESENCE OF H SUB2 SO SUB4 AT 65-120DEGREES.

UNCLASSIFIED

Automotive and Transportation

USSR

UDC 629.113.002.3

KOSTROV, A. V., Candidate of Engineering Sciences, and YAROV, B. S., Moscow Automechanics Institute

"Analytical Calculation of the Temperature Field at the Bottom of a Moskvich-412 Automobile Engine Piston"

Abstract: A method has been developed to calculate the temperature field at the bottom of a piston in a Moskvich-412 engine. Using initial values of coefficient of heat exchange from gases to bottom surface equal to 235 kcal/m^2-hr-degree, thermal conductivity of piston equal to 150 kcal/m-degree-hr and gas temperature of 1730 C, as well as the geometric shape of the piston bottom the authors developed the equations to arrive at a final equation for insertion of the initial data and obtain the temperature field which essentially varies from 300 C at the piston bottom center to 270 C along the circumference. 4 figures, 6 bibliographic references.

1/1

USSR   UDC: 629.7.036.3:534.83

YAROV, V.N.

"Evaluation of Effectiveness of Prospective Methods of Aircraft Engine Noise Attenuation"

Moscow, Tr. Mosk. Aviats. In-ta (Transactions of Moscow Aviation Institute), 1972, vyp 244, pp 125-128 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, 1973, Abstract No 3.34.73)

Translation: Possibility of using wide-band, resonating, quarter-wave filters in silencer channels was investigated. Experiments confirmed their high acoustic effectiveness and other advantages (in particular, compactness and lower resistance to flow) over the active method of absorbing the sound energy in absorbing materials.

1/1

1/2   024   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--THE CONTENT AND ACTIVITY OF BASIC COMPONENTS OF KININ SYSTEM IN
   BLOOD SERUM OF PATIENTS WITH RHEUMATISM -U-
AUTHOR--PASKHINA, T.S., YAROVAYA, G.A., LAUFER, A.L., GULIKOVA, O.M.,
   TRAPEZNIKOVA, S.S.
COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 152-161

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RHEUMATIC DISEASE, BLOOD CHEMISTRY, CHROMATOGRAPHY, ENZYME
   ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0766   STEP NO--UR/0301/70/016/002/0152/0161

CIRC ACCESSION NO--AP0102730
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0102730
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACTIVITY AND CONTENT OF BASIC
COMPONENTS OF KININ SYSTEM KININOGEN, KALLIKREIN, KININASE AND TOTAL
BASE ESTERASE AND ANTITRYPTIC ACTIVITY IN BLOOD SERUM OF 30 HEALTHY MEN
AND 17 PATIENTS WITH RHEUMATISM HAS BEEN STUDIED. THE ACTIVITY OF
KALLIKREIN IN BLOOD SERUM WAS DETERMINED BY MEANS OF ORIGINAL
CHROMATOGRAPHIC METHOD AND WAS AMOUNTED TO 30 PLUS OR MINUS 9 MKE-ML IN
THE CONTROL, I. E. 6.9 PLUS OR MINUS 1.7PERCENT FROM TOTAL BASE ESTERASE
ACTIVITY. THE ACTIVITY OF THIS ENZYME IN BLOOD SERUM OF PATIENTS WITH
RHEUMATISM IN ACUTE STAGE OF THE DISEASE IS ELEVATED AT AVERAGE BY 6-7
TIMES. THE TOTAL BASE ESTERASE ACTIVITY OF BLOOD SERUM REFLECTING THE
ACTIVITY OF PROTEINASES OF TRYPSIN TYPE (AND KALLIKREIN) TENDS TO
INCREASE IN PATIENTS WITH RHEUMATISM. BLOOD SERUM KININOGEN CONTENT IN
PATIENTS WITH RHEUMATISM (II AND III STAGES OF RHEUMATIC PROCESS) WAS
DIMINISHED FROM 4.6 (CONTROL) TO 3.5 MUG OF BRADYKININ PER ML. THE
ACTIVITY OF KININASE (CARBOXYPEPTIDASE N) WAS UNCHANGED. ANTITRYPTIC
ACTIVITY OF BLOOD SERUM OF PATIENTS WAS DECREASED DURING THE III RD
STAGE OF THE PROCESS ONLY; IN PATIENTS WITH I AND II STAGES THE ACTIVITY
WAS AT THE NORMAL LEVEL OR EVEN SLIGHTLY INCREASED. THE ANALYSIS OF
RESULTS INDICATES TO SOME CORRELATION BETWEEN CHANGES IN CHARACTERISTICS
OF KININ SYSTEM COMPONENTS AND THE EXTENT OF RHEUMATIC PROCESS ACTIVITY.
THE FALL IN KININOGEN CONTENT AND INCREASE IN KALLIKREIN ACTIVITY BOTH
TESTIFY TO THE ACTIVATION OF KININ SYSTEM AT RHEUMATISM.

1/2   017   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--FORMATION OF DEOXY SUGARS DURING THE IRRADIATION OF AQUEOUS
  SOLUTIONS OF CARBOHYDRATES -U-
AUTHOR-(04)-KOCHETKOV, N.K., KUDRYASHOV, L.I., YAROVAYA, S.M.,
  VOZNESENSKAYA, S.V.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 201-2

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SACCHARIDE, AQUEOUS SOLUTION, RADIOLYSIS, ATMOSPHERE
  COMPOSITION, OXYGEN, NITROGEN, NITROGEN OXIDE, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0434   STEP NO--UR/0062/70/000/001/0201/0202

CIRC ACCESSION NO--AP0117670
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELDS OF ALTERED ALPHA METHYL D,GALACTOSIDE, GALACTOSE, INOSITOL, LACTOSE, STARCH AND BLOOD GROUP SUBSTANCE WERE TABULATED FOR IRRADN. OF THESE IN SOLN. IN AN ATM. CONTG. O SUB2, N SUB2, OR N SUB2 O AT PH 7 AT DOSES OF [1-9] TIMES 10 PRIME19 EV-ML IN TERMS OF RESULTING DEOXYSUGARS, AS WELL AS DEOXYKETO SUGARS. THE RESULTS INDICATED THAT FORMATION OF DEOXY DERIVS. INVOLVES REACTION OF HYDRATED ELECTRONS AND O SUB2 PRIME NEGATIVE IONS, WHILE DEOXYKETO SUGARS ARE FORMED BY THE ACTION OF HO. RADICAL.   FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2   017   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--CLINICAL ASSESSMENT OF THE FUNCTIONAL CONDITION OF THE MYOCARDIUM
  AT DIFFERENT STAGES OF HYPERTENSIVE DISEASE ACCORDING TO
AUTHOR--YAROVENKO, V.K.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5 PP 60-62

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, HYPERTENSION, PHONOCARDIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1354   STEP NO--UR/0504/70/042/005/0060/0062

CIRC ACCESSION NO--AP0128761
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0128761
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED A
  PHONOCARDIOGRAM IN 152 PATIENTS WITH HYPERTENSIVE DISEASE, 21, HAD THE I
  STAGE, 71, IIA, 60, IIB. PATIENTS WITH THE IIB STAGE DEMONSTRATED
  VARIOUS CHANGES IN THE PHONOCARDIOGRAM: DROP IN THE AMPLITUDE OF THE I
  TONE, LENGTHENING OF THE Q-I TONE, LENGTHENING OF THE ELECTRIC AND
  SHORTENING OF THE MECHANICAL SYSTOLES. HEGGLIN'S SYNDROME WAS
  ENCOUNTERED IN 4 PATIENTS WITH IIA STAGE AND IN 16, WITH THE IIB STAGE.
  SYSTOLIC NOISE ON THE APPEX WAS REVEALED IN 73 PATIENTS, ON THE AORTA IN
  20. THE III TONE WAS ENCOUNTERED IN 8 PATIENTS (IN 3, WITH THE 1ST
  STAGE AT THE AGE OF UP TO 20 AND IN 5, WITH THE IIA AND IIB STAGE ABOVE
  40 YEARS OLD). IN 10 PATIENTS WITH IIB STAGE WITH PREVALENT AFFECTION
  OF THE HEART, HTE PHONOCARDIOGRAM SHOWED THE IV TONE. PERISYSTOLIC
  NOISE OF LOW AMPLITUDE WAS ENCOUNTERED IN 5 PATIENTS WITH THE IIB STAGE.
    THUS, PHONOCARDIOGRAPHY GREATLY CONTRIBUTES TO THE ASSESSMENT OF THE
  FUNCTIONAL CONDITION OF THE MYOCARDIUM IN PATIENTS WITH HYPERTENSIVE
  DISEASE.

1/2   011   UNCLASSIFIED   PROCESSING DATE--04DEC70

TITLE--KINETICS OF CONTINUOUS ALCOHOLIC FERMENTATION -U-

AUTHOR-(02)-YAROVENKO, V.L., NAKHMANOVICH, B.M.

COUNTRY OF INFO--USSR

SOURCE--FERMENT. SPIRT. PROM. 1970, 36(2), 14-17

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STARCH, HYDROLYSIS, FERMENTATION, SACCHAROMYCES, ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605007/E06 STEP NO--UR/0071/70/036/002/0014/0017

CIRC ACCESSION NO--AP0139904
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0139904

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STARCH WAS HYDROLYZED AT
100DEGREES WITH 2PERCENT HCL FOR 2.5 HR AND THE REDUCING SUGARS OBTAINED
WERE SUBJECTED TO CONTINUOUS FERMENTATION, AND WHEAT STARCH ALSO WAS
SACCHARIFIED, UNDER THE ACTION OF A CULTURE OF ASPERGILLUS BATATAE
STRAIN 61 AND THEREAFTER FERMENTED BY SACCHAROMYCES CEREVISIAE, STRAIN
12, AT 29-30DEGREES. IRRESPECTIVE OF THE FERMENTATION METHOD IS WAS
ASCERTAINED THAT THE FERMENTATIONS WHICH OCCURRED IN 2 BATTERIES OF
FERMENTERS ARE FIRST ORDER REACTIONS. IT THEREFORE IS POSSIBLE TO CALC.
THE AV. RATE CONST. WHICH IS VALID FOR EACH FERMENTER WHICH IN TURN
ALLOWS CALCN. OF THE AMT. OF SUGAR REACTING PER M PRIME3 OF EACH
BATTERY.

UNCLASSIFIED

USSR   UDC 621.79.011

KOLYAKIN, N. N., Voroshilovgrad Diesel Locomotive Plant, and YAROVINSKIY,
L. M., Central Scientific Research Institute of Heavy Machine Building

"Thermal Arc Characteristics in Various Methods of Fusion Welding"

Abstract: This paper investigates the thermal processes for various welding
methods by fusion under identical experimental conditions. The experiments
were done with a special calorimeter which permits building up a roller on
the specimen directly in the vessel, thus reducing heat losses in building
up the roller, and then carrying it over to the calorimeter as was done in
earlier experiments. A cross-sectional drawing of the special calorimeter
is given. The specimens used in the experiments were made of type St.3kp
carbon steel (0.19% C, 0.52% Mn, 0.02% P, and 0.034% S) and had the di-
mensions of 140 x 80 x 18 mm. The parameters of the welding methods are
presented in the form of two tables.

1/1

USSR

YAROVINSKIY, Yu. L., Candidate of Technical Sciences, PANIN, A. V., Engineer, and KOLUPAYEV, Yu. F., Engineer

"Investigation of the Influence of Multipass Welding Upon the Mechanical Properties of Welded Seams of Titanium Alloys VT6s and VT14"

Abstract: The article deals with an experimental investigation of the relationship of the mechanical properties of welded seams to the number of welding passes in the production of spherical containers from titanium alloys VT6s and VT14 by means of the newly introduced technique of multipass argon-arc welding by a submerged arc without dressing the edges. It is shown that considerable weakening of the welded seam does not take place, and the plastic characteristics do not change, while the observed grain increase does not exert a significant influence upon the mechanical properties of the welded seams. 1 figure. 4 tables.

1/1

USSR

UDC: 51

ASYLKOZHAYEV, K. A., TSEREVITINOV, B. F., YAROVITSKIY, N. V.

"Controlling the Quality of Goods in the Warehouse Storage Process"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), Kiev, 1971, pp 123-135 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V570)

[No abstract]

1/1

USSR   UDC 519.2

BODNARCHUK, P. J., PUSTOMEL'NIKOV, J. P., SLON'OVS'KIY, R. V., YAROVIY, S. S.

"Some Applications of Branch Continued Fractions when Studying Markov Processes"

Dopovidi AN URSR (Reports of the Ukrainian SSR Academy of Sciences), 1972, A,
No 5, pp 391-394, 475 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V37)

Translation: The distribution components at the time n for the Markov chain
with a finite number of states are represented in the form of branched continued
fractions. This representation is convenient for calculating such probabilities
by computer.

1/1

UDC 616.981.42:636.3]-07

USSR

YAROVOY, L. V., Chair of Infectious Diseases, Stavropol Medical Institute

"Diagnosis of Sheep-Goat Brucellosis in Man"

Moscow, Klinicheskaya Meditsina, No 2, 1970, pp 103-110

Abstract: Four main phases or pathogenetic stages of sheep-goat brucellosis in man are distinguished: (i) generalization of the infection, (ii) recurrent generalization with focal lesions, (iii) focal lesions, and (iv) sequellae. Symptoms characteristic of each phase are described, and diseases from which brucellosis should be differentiated are listed: 18 in phase one, 10 in phase two, 10 in phase three, and five in phase four. Problems in differentiating typhoid, Q fever, rheumatic fever, rheumatoid arthritis and arthritis deformans from brucellosis are discussed in some detail.

1/1

Acc. Nr: AP0045597

Ref. Code:
UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2 , pp 103-110

THE DIAGNOSIS OF SHEEP-GOAT BRUCELLOSIS IN MAN

L. V. Yarovoy

Summary

The author describes the diagnosis of sheep-goat brucellosis and its differential diagnosis at different pathogenetic periods.

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REEL/FRAME
19780574

USSR

UDC 576.858.25.01(478.9)

SKOFERTSA, P. G., GAYDANOVICH, S. Ya., OBUKHOVA, V. R., KONCHEBAR', N. D.,
YAROVOY, P. I., KLIGENKO, G. A., and MEL'NIKOVA, Ye. E., Scientific Research
Institute of Hygiene and Epidemiology, Kishinev, Moldavian SSR, and Institute
of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Isolation of Kharagysh Virus From the Kemerovo Group in the Moldavian SSR"

Abstract: A virus isolated in 1971 from an Ixodes ricinus pool collected from
sheep in the Moldavian SSR, named Kharagysh by the authors, was lethal to 2-4
day mice and not so to 3-4 week mice. The virus passed through a 100 nanometer
pore filter but was retained at 50 nanometers. Sodium desoxycholate and ether
had little effect on virus titers. Inasmuch as it was impossible to obtain a
hemagglutinating antigen to the virus by usual methods, identification studies
were carried out by the complement-fixation reaction. Tests with immune ascitic
fluid reactive to several arboviruses were positive only for the Kemerovo group.
Moreover, within that group the most pronounced cross-reaction was with the
Tribech subgroup. Thus it is demonstrated that Kharagysh virus belongs to the
Kemerovo-Tribech group. Apparently I. ricinus plays an important carrier role
in the infection cycle.
1/1

USSR

YAROVOY, P. I., Assistant Ministry of Health, Chief Sanitary Physician, Moldavian SSR

"The Problem of Sanitary Control"

Moscow, Zashchita Rasteniy, No 2, 1971, pp 18-19

Abstract: Protection of people working with pesticides is one of the most important problems of the State autorities in agriculture and public health. In the Moldavian SSR, 2.2 million hectares are treated with chemical agents (30-35 thousand tons are used annually). In 1964-1969 a series of measures was instituted to improve considerably the sanitary and hygienic conditions under which pesticides are used, to reduce contamination of food products, and to protect the people working with pesticides and the population as a whole. Specialist treams for laboratory testing were set up all over the Republic. Mechanization of production processes helped to reduce contamination dangers in insecticide plants. The machinery used to apply insecticides to agricultural crops in the Moldavian SSR was greatly increased (from 560 pieces in 1964 to 7238 pieces in 1969). The problem of pesticide residues on fruit and vegetables received special attention and the amount of such residues has been reduced. Still, removal of all organophosphorus pesticides remains to
1/2

USSR

YAROVOY, P. I., Zashchita, No 2, 1971, pp 18-19

be accomplished and the state must create the necessary conditions for complete mechanization of agricultural application of chemicals.

2/2

USSR

UDC 535:37:548.736

I. A. PARFIANOVICH and P. N. YAROVOY (Irkutsk State University)

"Nature of the Inertia of Photostimulated Luminescence of the Crystal Phosphor NaCl-Ni"

Abstract: Light absorption and emission in NaCl-Ni are due to centers formed by monovalent Ni^+. Samples grown from $NaCl-NiCl_2$ contain only bivalent Ni^{++} ions. Ionizing radiation transforms these ions into monovalent ions and also forms F-centers in the crystal. The after-glow following a 10 microsec exposure decays exponentially. The light emission is practically independent of temperature in the 90 to $400°K$ range.

Experiments indicate that the inertia of photostimulated luminescence is due to electrons remaining on the excited level of the luminescence centers: i.e., the Ni^+ ions that replace the cations in the lattice. The participation of electron traps is investigated with the aid of thermoluminscence curves. The peaks of the curves indicate that in addition to the F-centers there are at least four systems of small electron capture levels. Impurity ions are the principal electron capture centers in the kinetics of afterglow. Special
1/2

USSR

experiments were made to study the possible storage of light when a phosphor sample is excited in the activator absorption band. Delocalization of the excited state is observed, but no photoconductivity or internal excitation of the centers.

It is concluded that recombination luminescence is due to the capture of electrons by Ni^{++} ions, whereby the electrons reach the excitation level of the Ni^+ center. Preliminary results are sketched for experiments in which the phosphor was exposed to ruby laser pulses. Storage of light is observed on the free electron capture levels. Results compare with those obtained by X-ray radiation.

Orig. art. has 2 figures and 9 references.

2/2

USSR

YAROVOY, YU.

"Electron Eaters"

Sverdlovsk, Ural, No 1, 1971, pp 175-178

Abstract: There are bacteria which feed on sulfur, iron, copper, and gold.
The sulfobacteria utilize oxygen to split hydrogen sulfides and form water
and sulfur which they then consume. Large cenetaries of sulfur-filled
bacteria from sulfur deposits. Some 90% of the earth's sulfur is believed
to be of bacterial origin. Iron bacteria derive energy from electrons which
they gain when they convert bivalent ferrous compounds into trivalent ferric
compounds. Thiobacillus ferrooxidans oxidizes sulfur into sulfuric acid
which then interacts with copper ores to form copper sulfate. Industry has
taken advantage of this natural phenomenon: copper sulfates are obtained by
running suspensions of these bacteria through copper ore deposits. This
process is considerably less expensive than the traditional method. Other
bacteria, also utilized in industry, purify aluminum from sulfur contaminants.
A certain strain of fungi dissolve gold, cover thenselves with this gold,
and eventually water carries these "gold-thieves" into various areas, includ-
ing oceans. This explains why gold, the most insoluble of all metals, is
so widely dispersed throughout the world.
1/1

USSR

YAROVOY, Yu.

"Biological Energy Field: Fantasy or Reality?"

Sverdlovsk, Ural, No 5, 1970, pp 138-140

Abstract: This is a popularized account of the scientific events that preceded
the discovery of bioplasma, a substance present in all living things, which can be
recorded with a new device invented by the Soviet biologist Viktor Inyushin. The
bioplasmograph is capable of detecting all kinds of abnormalities in the body from
the nature of the emissions of organs and tissues. A living cell is a "micro-
radiostation", capable of both emitting and receiving energy. Any disease of man
can be regarded as a disruption of the energy balance, which can be controlled by
red laser light. By irradiating the synthetic and cervical ganglia, which are
thought to regulate arterial pressure in man, investigators have succeeded in
curing hypertension and normalizing cardiac function. Laser rays have healed
wounds quickly and checked the growth of viruses, particularly the influenza virus.
The physician L. Mazo, one of the first to treat neurologic diseases with lasers,
has successfully used them to eliminate the sequelae of poliomyelitis, encepha-
litis, and meningitis. We may well be on the threshold of a revolution in medi-
cine in the diagnosis, treatment and prevention of disease. Bioplasmographs and

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USSR

YAROVOY, Yu, Ural, No 5, 1970, pp 138-140

lasers will make it possible to correct the energy balance in any human organ and return it to its normal, healthy state.

2/2

USSR

UDC 621.52:539.23:621.315.592

YAROVYKH, B.YA., BRATOVA, G.S.

"Preparation Of The Surface Of Pyroceramic Substrates Before Vacuum Deposition"

Translation: Effective methods were developed and tested for increasing adhesion in film-substrate systems as the result of an improvement of the cleansing of the surface of the latter. In order to obtain comparative quantitative character-istics, a method was used of measuring the contact angle (wetting angle) of drops of oil. Methods for checking cleansing of the surface and for evaluation of the sensitivity of these methods are developed. The new methods of cleansing substrates before deposition of thin-film coverings on them were introduced into industry; equipment used at present in production was designed. 3 ref.Ye.G.

1/1

Acc. Nr. *AP0045178*   Abstracting Service: Ref. Code
                        CHEMICAL ABST.   5-70   UR 0191

91217b Granulated copolymer of styrene with α-methylstyrene. Yartsev, L. K.; Kirillova, E. I.; Glagoleva, Yu. A.; Vasil'eva, T. A.; Yartseva, E. E.; Vinogradov, G. V. (USSR). *Plast. Massy* 1970, (1), 41-3 (Russ). The title copolymer (I) was pelletized in a ED-2M disc extruder and a BE-40 screw extruder and then subjected to irradn. in the air (from a PRK-2 lamp) at 25-30°. I films were also subjected to thermal aging at 60-200° for 3,000 hr. Light and thermal aging data revealed that I was best processed in the disc extruder. The pelletized I exhibited superior physicomech. properties and similar (to the prepelletized I) lightfastness and thermal stability.
                                                        CKJR

REEL/FRAME
19780078

USSR

UDC: 8.74

JARTSEV, Yu.

"Concerning Programming of the Method of Fejer Collocation in the MALGOL Language"

Tr. Tallin. politekhn. in-ta (Works of Tallinn Polytechnical Institute), 1971, A, No 312, pp 61-65 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V532)

Translation: An algorithm is considered for programming the Fejer collocation method in the MALGOL language as applied to linear differential equations with homogeneous boundary conditions. Data are given on exact and approximate solution of a specific boundary value problem. In particular, the results imply the validity of the proposed programming scheme. Author's abstract.

1/1

1/2   014   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--EFFECT OF ORIENTATION ON THE ELECTRICAL STRENGTH OF POLYMER FILMS
-U-
AUTHOR-(05)-ROMANOVSKAYA, O.S., SHCHERBAK, P.N., VOROBYEV, V.P., YARTSEVA,
E.E., SHPAKOVSKAYA, G.B.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. B 1970, 12(1), 27-31

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--POLYSTYRENE RESIN, COPOLYMER, PLASTIC FILM, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0927   STEP NO--UR/0460/70/012/001/0027/0031

CIRC ACCESSION NO--AP0055625
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0055625   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCREASE OF POLYSTYRENE (I) OR STYRENE-ALPHA-METHYLSTYRENE COPOLYMER (II) FILM ORIENTATION, AS INDICATED BY THE INCREASE IN THE BIREFRINGENCE SMALLER THAN OR EQUAL TO 5 TIMES 10 PRIME NEGATIVE3, ALSO INCREASES THE ELEC. BREAKDOWN VOLTAGE (E) 30-50PERCENT. A FURTHER INCREASE IN THE ORIENTATION HAS NO EFFECT ON THE E OF II AND DECREASES THE E OF I.

UNCLASSIFIED

Acc. Nr. *AP0045178* Abstracting Service: Ref. Code
                       CHEMICAL ABST.   15-70   UR0191

91217b Granulated copolymer of styrene with α-methylsty-
rene. Yartsev, I. K.; Kirillova, E. I.; Glagoleva, Yu. A.; Vasil'e-
va, T. A.; Yartseva, E. E.; Vinogradov, G. V. (USSR). Plast.
Massy 1970. The title copolymer (I) was pellet-
ized in a ED-2M disc extruder and a BE-40 screw extruder and
then subjected to irradn. in the air (from a PRK-2 lamp) at
25-30°. I films were also subjected to thermal aging at 60-200°
for 3,000 hr. Light and thermal aging data revealed that I was
best processed in the disc extruder. The pelletized I exhibited
superior physicomech. properties and similar (to the prepelletized
I) lightfastness and thermal stability.   CKJR

REEL/FRAME
19780078

USSR

UDC: 616.24-003.656.6

LYUBOMUDROV, V. Ye., ZHILKO, S. M., KIRYUKHINA, N. V., SIROTA, G. M., SKOCHELYAS, A. R., TAUSHAN, M. T., and YARTSEVA, P. A., Medical Institute Imeni A. M. Gor'kiy, and Oblast Clinical Hospital of Occupational Diseases, Donetsk

"Radiological Characteristics and the Course of Early Stages of Anthracosis"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 1, 1970, pp 42-44

Abstract: Characteristics of the initial stages of anthracosis, as determined by x-ray, were studied, and the course of the disease was traced. Coal miners were studied on the basis of x-rays repeated every two to three years. It was established that linear and nodular local fibroses are the initial stages of anthracosis. Sclerotic fibrosis was frequently combined with bronchitis or emphysema, which severely complicate the course of the disease.

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USSR

UDC: 678.01:677.52+539.4

ZHIGACH, A. F., TSIRLIN, A. M., SHCHETILINA, YE. A., SVETLOV, I. L., GRIGOR'YEV, V. I., SHAFRANOVICH, E. G., BULYGINA, T. I., and YARTSEV, V. A., State Scientific-Research Institute of Chemistry and the Technology of Elementoorganic Compounds, Moscow

"Mechanical Properties of Boron Fibers"

Abstract: The authors study the strength distribution of boron fibers. The study is based on a large amount of experimental material. The results show that the strength of boron fibers can be sufficiently accurately described by the Weibull or by normal rules of distribution. The parameters of these distributions are determined. The typical defects in boron fiber macrostructure are isolated and described. Mean strength as a function of tested fiber length is studied experimentally.

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UNCLASSIFIED

TITLE--ON THE POSSIBILITY OF CONTRACTI G CUTANEOUS LEISHMANIASIS IN GURIEV
REGION -U-

PROCESSING DATE--30OCT70

AUTHOR--YARUKHAMEDOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--MEDIT INSKAYA PAR ZITOLOGIYA I PARAZITARNYYE BOLEXNI, 1970, VOL
39, NR 3, PP 365-366

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEISHMANIASIS, GEOGRAPHIC PATHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0232

STEP NO--UR/0358/70/039/003/0365/0366

CIRC ACCESSION NO--AP0123994

UNCLASSIFIED

CIRC ACCESSION NO--AP0123994   UNCLASSIFIED   PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR OBSERVED 3 PATIENTS
WITH CUTANE US LEISHMANIASIS ARRIVING FROM THE GURIEV REGION. TWO OF
THEM ARRIVED FROM THE EMBA DISTRICT HAVING ULCERS IN WHICH LEISHMANIA
WERE FOUND UP N MICROSCOPIC EXAMINATION. THE THIRD PATIENT ARRIVED IN
TURKMENIA IN DECEMBER WHEN INFECTION WITH CUTANEOUS LEISHMANIASIS WAS
EXC UDED BY METEOROLOGICAL CONDITIONS. BEFORE THAT TIME ALL THE THREE
PATIENTS HAD NEVER LEFT THE GURIEV REGION. THE EPIDEMIOLOGICAL
ANAMNESIS, CLINICAL COURSE OF THE DISEASE AND MICROSCOPIC STUDIES GIVE
REASONS TO BELIEVE THAT INFECTION OF THESE PATIENTS WITH CUTANEOUS
LEISHMANIASIS OCCURRED IN THE GURIEV REGION.

UNCLASSIFIED

USSR

ALEKSANDROVA, I. A., YARULLINA, L. I., and KHAYRULLIN, V. K., Institute of
Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Vinyldichlorophosphine With Acrylic and Propiolic Acids"

Abstract: For further elucidation of the effect of the phosphorus substituent
in chlorophosphine on the intensity of the reaction with α, β-unsaturated acids,
the authors studied the reaction of vinyldichlorophosphine with acrylic and
propiolic acids. The reaction of vinyldichlorophosphine with acrylic acid,
which is accompanied by initial nucleophilic attack by the phosphorus atom on
the β-carbon atom of the acid, results in the formation of vinyl-(β-chloro-
formylethyl)phosphinic acid chloride (II). Hydrolysis of II gives vinyl-(β-
carboxyethyl)phosphinic acid, the interaction of II with alcohol gives the
ethyl ester. Heating of II with $(CH_3CO)_2O$ gives 2-vinyl-2,5-dioxo-1,2-oxaphos-
pholane. Reaction of the latter with ethanol gives ethyl ester of vinyl-(β-
carboxyethyl)phosphinic acid, with aniline vinyl-(β-phenylcarbamoylethyl)
phosphinic acid. The reaction of vinyldichlorophosphine with propiolic acid
gives vinyl-(β-chloroformylvinyl)phosphinic acid chloride, which could not be
isolated in pure form.
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USSR

UDC: 539.2.01

PAVINSKIY, P. P., YARUNIN, V. S.,

"Electrical Field of Semi-Infinite Cubic Crystal of Quadrupoles"

Translation: An analysis is made of the electrical field of a semi-infinite crystal with a simple cubic lattice formed of point quadrupoles. The field potential of one plane (100) of quadrupoles is calculated and addition of potentials of planes is used to produce expressions for the potential and field intensity of the semi-infinite crystal at distance z from the surface. The exponential nature of the attenuation of the field allows the field to be considered nonzero only at nodes of the lattice of the surface layer. The potential is calculated near the node after subtracting the singular potential of the node itself. The field of the lattice of quadrupoles polarizes molecules of the surface layer, leading to the appearance of a macroscopic field. An expression is found for the dipole moment per unit surface.

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1/2   014   UNCLASSIFIED   PROCESSING DATE--11DEC70
TITLE--ELECTRIC FIELD OF SEMI INFINITE CUBIC CRYSTAL CONSISTING OF
QUADRUPOLES -U-
AUTHOR-(02)-PAVINSKIY, P.P., YARUNIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIV. FIZ. KHIM,. (USSR), NO. 1, P. 22-5
(1970)
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRIC FIELD, DIELECTRIC POLARIZATION, ELECTRIC QUADRUPOLE
MOMENT, CUBIC CRYSTAL, POISSON EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FO70/605029/C11 STEP NO--UR/0054/70/000/001/0022/0025

CIRC ACCESSION NO--AP0141710
                          UNCLASSIFIED

CIRC ACCESSICN NO--AP0141710   UNCLASSIFIED   PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MACROSCOPIC ELECTRIC FIELDS IN A
SEMI INFINITE CRYSTAL CONSISTING OF POINT QUADRUPOLES HAVE BEEN
CONSIDERED. THE FIELDS ARE DUE TO DIELECTRIC POLARIZATION OF SURFACE
MOLECULES, WHICH IS EQUIVALENT TO SOME DOUBLE LAYER DISTRIBUTION. THE
DENSITY OF SUCH DISTRIBUTION MAY BE CALCULATED FOR A GIVEN BOUNDARY OF
THE CRYSTAL AND THE KNOWN STRENGTHS OF PRIMARY QUADRUPOLES. AN EXAMPLE
OF SUCH CALCULATION IS GIVEN WITH THE APPLICATION OF THE POISSON
FORMULA.

UNCLASSIFIED

USSR

BURDIN, N. M., YARUSHEK, V. Ye.

"Statistical Synthesis of Logical Plans for Pattern Recognition"

Abstract: A method is suggested for construction of a logic circuit designed for pattern recognition on the basis of observable coordinates (signs), represented as binary codes. The circuit is constructed of logic elements and has n inputs and N outputs. It is required that the solution be optimal in the sense of one of the statistical criteria. The arbitrary distributions of observed coordinates for each of the patterns to be recognized are assumed known. A method is described for synthesis of optimal and near-optimal circuits in relation to the statistical criterion selected. The essence of the method is that the division of the entire set of input signals into the N nonintersecting subsets (classes), each conforming to one definite decision, is performed in the stage of synthesis of the circuit; then the system of N logic functions F_i is constructed, each function corresponding to a given decision D_i and becoming equal to unity for code combinations of input binary variables related to the proper subset.
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USSR

YARUSHKIN, B. I.

"Certain Formalisms in Models of Pattern Recognition"

Tr. NII Upravl. Mashin i Sistem [Works of Scientific Research Institute for Control Machines and Systems], 1973, No 7, pp 133-140 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V774)

Translation: The possibility is studied of using methods of pattern recognition for formal representation and study of complex systems. With this purpose, certain algebraic relationships are defined in the set of initial characteristics; the concepts "model of an object" and "model of a set of objects" are formulated in set-theory terms. It is proven that the mapping of a set of objects in a set of characteristics has the properties of isomorphism relative to equivalence. An interpretation is presented of the result produced for certain applied problems.

Author's view

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USSR

UDC: 518.5:681.3.06

YARUSOVA, O. V., SOLOGUB, Ye. I.

"Methods of Comparing Two Variants on the 'Promin'-M' Computer"

Sb. nauch. tr. N.-i. i proyektn. in-t po obogashch. i aglomer. rud chern. met. (Collected Scientific Works of the Scientific Research and Design Institute on enrichment and Agglomeration of Ferrous Metal Ores), 1971, vyp. 12, pp 107-111 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V759)

Translation: The authors describe algorithms for comparing two sets of numerical data obtained as a result of certain measurements. Each set is characterized by an average value and by an index of running deviation (variability) from the average. In order to evaluate the difference between the sets as a whole, use is made of a method of comparing two averages; in order to evaluate the difference between the sets with respect to conjugate measurements, use is made of Student's criterion (assuming that the number of measurements n is less than or equal to 30-50 and the statistical set has a close to normal distribution law) or

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YARUSOVA, O. V., SOLOGUB, Ye. I., Sb. nauch. tr. N.-i. i proyektn. in-t po obogashch. i aglomer. rud chern. met., 1971, vyp. 12, pp 107-111

Wilcoxon's law (assuming that n is less than 35). The latter is independent of the law of distribution of the statistical set. Structural schemes are given for programs of comparison of the two sets with respect to averages by Student's t-criterion, and with respect to conjugate pairs -- by Wilkoxon's criterion. The operation of the programs is illustrated by examples. A. Doroshenko.

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can't be found

Metrology, Mapping, Surveying, Graphics

USSR

KORSEN, V. K., PIKKOV, O. M., YARVAL'T, A. E.-I.

"Method of Measurement of Small Differences in Frequencies of Two Signals"

Otkrytiya Izobretmeniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 359606.

Translation: Method of measurement of small differences in frequencies of two signals, based on determination of the increment in phase difference of these signals, not exceeding π during the measurement cycle, and the change in the initial phase of one signal by π, differing in that in order to increase accuracy, interference stability and to simplify the measurement process, an initial phase difference is set less than π, which changes the initial phase of the first signal by π when the phase difference of the input signals exceeds π, while the transmission of pulses of the first signal formed at the moments of its transition through the zero level in two directions control the pulses of the second signal formed at moments of transition through the zero level in one direction, and the difference in summary lengths of the two groups of pulses of signal phase difference formed in sequence, the number of pulses in which is identical, is measured.

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USSR

UDC 615.37.015.45:612.112.94

YARVELOV, B. N., PINEGIN, B. V., and UTESHEV, B. S., Chair of Microbiology and Pharmacology, Second Moscow Medical Institute imeni N. I. Pirogov

"Capacity of Antibody-Forming Cells Cultured in vitro to React With a Specific Antigen"

Abstract: The capacity of mouse immune lymphoid cells cultured in Hottinger's broth or Eagle's medium to produce rosettes was studied. Despite the preservation of a substantial number of direct and indirect plaque-forming cells in the culture, the lymphoid cells completely lost their capacity to form rosettes when incubated with sheep erythrocytes. After cultured cells were transplanted to normal syngenic recipients (intravenous injection), the number of rosette-forming cells in the spleens of the recipients failed to exceed the background level. Thus, antibody-forming cells grown on Eagle's medium or Hottinger's broth proved to be incapable of reacting with a specific antigen and producing rosettes. The phenomenon is thought to be related to some changes in the surface membranes of antibody-forming cells cultured in vitro.

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USSR

YARYGIN, A. P.

"Edge Wave Method in Diffraction Problems for Bodies Located in a Smoothly Inhomogeneous Medium"

Abstract: The edge wave method [P. Ya. Ufimtsev, Metod krayevykh voln v fizicheskoy teorii difraktsii, Sovetskoye Radio Press, 1962] of solving diffraction problems for bodies having a surface fracture is generalized to the case where the bodies are located in a smoothly inhomogeneous medium. As applied to a homogeneous medium, the expressions obtained for the scattered field have advantages over the expressions presented by P. Ya. Ufimtsev for each specific body. The expressions are quite simple and smooth, permitting determinination of the possible depolarization of the reflected field in the most general form without specifying the body configuration and permitting analysis of the dependence of the scattered field on the polarization of the infinite wave. The effect of the inhomogeneous medium on the magnitude of the boundary effects is considered, and the expressions obtained by A. L. Gutman, et al. [Radiotekhnika i elektronika, Vol 16, No 1, 3, 1971] for the field from the uniform part of a current are expanded in an asymptotic series by the stationary phase
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USSR

method for surface integrals to obtain the field scattered in the direction of the irradiation source by the uniform part of the current. The results of this analysis can be considered a generalization of the geometric diffraction theory to the case of a smoothly nonuniform medium as applied to bodies having surface fractures.

Some examples are given of the qualitative picture of the variation of the edge wave as a result of nonuniformity of the medium including calculation of the diffraction field from bodies located in a radially nonuniform medium. The examples show that the nonuniform medium essentially affects the distribution of the nonuniform part of the current near the surface fracture of the body, and consideration of this phenomenon is necessary when solving the problems of diffraction from bodies located in a nonuniform medium.

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USSR

UDC 621.43.011:533;621.5:533

YARYGIN, V. N., KUZNETSOV, L. I.

"Certain Results of a Study of a High-Temperature Underexpanded Jet"

V sb. Fiz. nizkotemperatur. plazmy. Tr. III-Vses. konf. po dinamike razrezh. gazov. VI Sekts. (Physics of Low-Temperature Plasma. Works of the III All- Union Conference on the Dynamics of Rarefied Gases. Section VI -- Collection of Works), Novosibirsk, 1971, pp 25-30 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B409)

Translation: The experimental technique and the results of the study of a jet expanding from an electric arc plasmatron into a vacuum are presented. The local mass velocity was measured with a probe selecting a stream of gas for subsequent measurement of the volume over a given time. The distribution of local mass velocity was obtained along the axis of the jet flowing from a sonic nozzle of diameter 6.1 mm. The gas temperature in the prechamber was 3700°K. The distribution of Mach number along the axis of the jet was measured. A cylindrical total pressure transducer was used for this purpose. The results of these measurements were compared with the calculated distribution obtained by the characteristics method. The local gas density was measured by a method

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YARYGIN, V. N., KUZNETSOV, L. I., Fiz. nizkotemperatur. plazmy. Tr. III-Vses. konf. po dinamike razrezh. gazov. VI Sekts, Novosibirsk, 1971, pp 25-30

based on the use of x-ray bremsstrahlung. A beam of electrons produced by an electron gun intersected the stream and struck a collector. The x-ray photons were recorded with a scintillation counter. The distribution of gas density along the axis of the stream was obtained for two regimes differing in the temperatures of the gas in the prechamber. 7 ref. Yu. F. Dityakin.

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USSR

YARYSHEV, G. M., SUYETIN, P. Ye.

"Some Results of the Dynamic Nature of Adsorption"

Nekotorye Sledstviya Dinamicheskogo Kharaktera Adsorbtsii [English Version
Above], Moscow, 1971, 13 pages (Translated from Referativnyy Zhurnal, Khimiya,
No 2, 1972, Abstract No 2 B1375 Dep. by the author's).

Translation: An attempt is made to analyze the adsorbed state and some re-
lated phenomena on the basis of kinetic concepts. It is shown that the be-
havior of a gas in the adsorbed state can be described by the Van-der-Waals
equation. It is concluded on the basis of the equation produced that the
critical temperature of the matter in the adsorbed state is no less than the
three-dimensional critical temperature. The possibility is demonstrated of
analyzing the process of condensation (or evaporation) as a process of suc-
cessive phase transition of molecules adsorbed on the surface of their own
liquid.

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USSR

YARYSHEV, G. M., and SUYETIN, P. Ye., Ural Polytechnical Institute, Sverdlovsk

UDC 541.183

"Experimental Determination of the Life of an Adsorbed Atom"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 1, Jan 71, pp 8-11

Abstract: Using the Clausing method, life τ of the molecules Ar, Kr, and Xe adsorbed on the surface of a copper capillary was determined in a wide temperature range: 230-77.2°K. It was shown that lg τ is a linear function of $1/T$ at high temperatures, but begins to curve towards the ordinate axis as the temperature is lowered. On the basis of the linear portion of the curve, τ_0 from Frenkel's equation was found to be $1.7-1.8 \cdot 10^{-10}$ sec for all gasses studied. The heat of adsorption of Ar, Kr, and Xe was determined to be 2.85, 3.6, and 4.5 kcal/mole respectively. The relationship between lg τ and Q_0/T may be represented by a single curve for all gasses studied, indicating that their heat of adsorption relates directly to the temperature.

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USSR

UDC 541.183

YARYSHEV, G. M., and SUYETIN, P. YE., Ural Polytechnical Institute Imeni S. M. Kirov, Sverdlovsk

"The Problem of Physical Adsorption of Gasses on a Solid Body. I. Monomolecular Adsorption With the Consideration of Intermolecular Interaction Adsorbate --Adsorbate"

Abstract: An isotherm equation of monomolecular adsorption was derived. The equation was qualitatively analyzed. It was shown that the Langmuir equation holds true in the range of high temperatures where it can be applied to cover the experimental data of the adsorption gasses on both the energetically homogeneous and heterogeneous surfaces. At low temperatures and low densities of the particles in the adsorption layer the isotherms obtained from the equation are curved in their initial segments.

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USSR

UDC 541.183

YARYSHEV, G. M., SUYETIN, P. YE., Ural Polytechnical Institute Imeni
S. M. Kirov, Sverdlovsk

"The Problem of Physical Adsorption of Gasses on Solid Body. II. Polymolecular
Adsorption Equation With Consideration of the Intermolecular Interaction
Adsorbate -- Adsorbate"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 10, Oct 72, pp 2647-2649

Abstract: The isotherm equation for polymolecular adsorption was obtained. The
equation of Huettig and BET represent a small segment of the oveall area covered
by this equation. Qualitative analysis of this equation was carried out. It
was shown that the applicability of the BET equation is limited to the range of
high temperatures; at low temperatures it describes the terminal stages of the
filling of the monolayer and initial period of the filling of the second layer.
In that range the isotherm equation is practically independent of the degree of
energetic heterogeneity of the adsorbent surfaces. In other areas the polymolec-
ular adsorption becomes complicated, becoming fully dependent on the energetic
structure of adsorbent surface.

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USSR

UDC: 620.193.43

KOCHERGIN, V. P., BOCHKAREVA, N. N., and YARYSHEVA, I. A., Ural State University imeni A. M. Gor'kiy

"Corrosion and Stationary Potentials of Carbon Steel in Molten Sodium, Potassium, and Calcium Chlorides"

Abstract: Molten sodium, potassium, and calcium chlorides are widely used on heat treating lines for steel parts; however the data on carbon steel corrosion in these media are far from adequate. The effect of the carbon content in the steel on corrosion rate has so far been studied only in aqueous solutions, and sometimes with conflicting conclusions. A curve reflecting the relationship between the stationary potential and the mean corrosion rate of U7 steel in molten KCl at 850°C shows that a higher carbon content shifts the stationary potential first to negative and then

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USSR

KOCHERGIN, V. P., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 457-459

to positive values with the mean corrosion rate passing through the maximum. A corresponding curve for the eutectic mixture $CaCl_2$-NaCl at 575°C is the exact opposite. In both cases an increase in the mean corrosion rate corresponds to the shift of the stationary potential to negative values. The above effect of carbon is related to changes in the structure of the steel. At 850°C with up to 0.2% C, the steel comprises ferrite and austenite; within 0.7--1.2% C, -- austenite and secondary cementite. Carbon steels containing austenite feature a lower corrosion resistance in molten KCl at 850°C. Addition of more than 0.2% NaOH to molten KCl moves the stationary potential to positive values even more intensively. The opposite change in the potential is observed by adding KCl to the eutectic mixture $CaCl_2$--NaCl at 575°C. The obtained data on the effect of NaCl, KCl, and $CaCl_2$ on the stationary potential of U7 steel agree well with those obtained by other researchers in determining the potentials of beryllium, zirconium, and titanium in molten halides of alkali and alkali-earth metals.

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USSR   UDC: 621.315.592

PARITSKIY, L. G., RYVKIN, S. M., and YARZHEMBITSKIY, V. B.,
A. F. Ioffe Physico-Technical Institute.

"Obtaining Photographic Images on the Surface of a Class of
Semiconductors With an Active Gaseous Medium"

Abstract: Because research in electronic phenomena of adsorption
and catalysis in semiconductors offers opportunities for explora-
tion of gas-adsorption photographic processes, the authors present
their ideas on the subject in this brief communication, and con-
sider a type of semiconductor reaction with the molecules of an
adsorbent reagent controlled by active radiation. In this type,
the reagent is reduced, or oxidized, at the semiconductor surface
with the participation of unbalanced electrons, or holes, and the
interactions of the products of this reaction with the semicon-
ductor material. The image is then formed by local action at the
surface when the reaction products leave the surface or through
color-insoluble products of the reaction adsorbed on the surface.
It is noted that a photographic effect was also detected on
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USSR

PARITSKIY, L. G., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1400-1401

photosensitive PbS surfaces in mixed saline and acetic acid vapors.

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USSR

UDC 621.822.002.3:621.762

YAS', D. S., OSVETIMSKIY, L. A., DYADENKO, N. S., ZAPOROZHETS, A. A., and BELENKOVA, N. A., Ukrainian Scientific Research Institute of the Textile Industry

"Copper-Graphite Materials with Additives of Graphite Granules Plated with Copper"

Abstract: A new method for improving the antifriction properties of materials intended for operation under conditions of dry friction, for manufacturing sliding contacts and low-load sliding bearings, developed at the metal ceramics laboratory of the Ukrainian Scientific Research Institute of the Textile Industry was applied to obtain metal ceramic of copper-graphite material with additives of graphite granules plated with copper. The results, presented in graphs and photographs of microstructure of copper-graphite materials with various graphite content, show that the addition of copper-plated graphite reduces the material electric conductivity and increases its compression strength, and with 6% content the hardness and bending strength increase. Thus, for a material with 15 wt% content of plated graphite, hardness and compression and bending strength increase by 30, 80, and 100%, respectively, while
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USSR

YAS', D. S., et al., Poroshkovaya metallurgiya, No 5, May 71, pp 70-75

the specific electric resistance and the dry friction coefficient decrease by 60 and 27%, respectively, in comparison with the same material with exposed graphite.

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USSR   UDC: 536.46

BAYEV, V. K., TRET'YAKOV, P. K., YASAKOV, V. A.

"Experimental Study of Processes of Combustion of Gaseous Fuels"

Translation: An experimental study is performed of the combustion of homo-geneous mixtures in a flat channel with a sudden expansion with velocities at the input to the channel of up to M = 1.25 for the case of diffusion combustion of a stream of hydrogen in an open wake and in a channel of constant cross section in the range of weight M numbers of 0.4 to 1.58.

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USSR

UDC 536.46:533.6

BAYEV, V. K., TRET'YAKOV, P. K., YASAKOV, V. A.

"Experimental Study of the Combustion of Gas-Air Mixtures in a Channel and of Diffusion Combustion in a Satellite Flow at High Velocities"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 357-360 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B952)

Translation: The results of an experimental determination of the lengths of flames of homogeneous mixtures in a plane channel with sudden expansion at velocities at the input to the channel up to M = 1.25 are presented. Also determined were the length of separation and the total length of the flame under combustion of an axisymmetric jet in a satellite coaxial free flow of air and in a channel of constant cross section in the Mach number range 0.4--1.58. The measurements of the flame lengths based on photometric measurement and on the distribution of static pressures are compared. It is shown that a universal representation of the geometric characteristics of the flames is possible. 7 ref. Authors' abstract.

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USSR

UDC 629.7.036.3:536.46

BAYEV, V. K., TRET'YAKOV, P. K., and YASAKOV, V. A.

"An Experimental Investigation of the Combustion of Gas-Air Mixtures in a Channel and Diffuse Combustion in a Cocurrent Stream at High Velocities"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 357-360 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract Ni 2.34.33 Resume)

Translation: Results are presented of an experimental determination of the flame lengths of homogeneous mixtures in a two-dimensional channel with sudden expansion at velocities of up to 1.25 Mach at the channel entry; the separation length and the total length of the flame during the combustion of an axisymmetric jet in a cocurrent coaxial free stream of air and in a channel of constant cross section within the Mach-number range of 0.4--1.58. Results of measurement of the flame lengths are compared on the basis of photometry and on the basis of distribution of the static pressures. The possibility of criterial generalization of the geometric characteristics of the flame are shown. 8 figures. 7 references.

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USSR

YASAVIYEV, F. Z.

"On the Absence of Limit Cycles of One Differential Equation"

Translation: Conditions are given under which a system of the form $x' = y$, $y' = -x - x^2 - bxy + y_2 + f(x, y)$, $b > 0$ does not have limit cycles. N. Rozov.

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BIOLOGY
Biochemistry

USSR   UDC 577.12

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"Demonstration of Membrane Potential in Mitochondria by Means of Changes in the Fluorescence of Anilinenaphthalene Sulfonate"

Abstract: After addition of 1-aniline-8-naphthalene sulfonate (ionized ANS$^-$) to a suspension of mitochondria or submitochondrial particles (SMP), characteristic changes occur in ANS$^-$ fluorescence when electrical membrane potentials are generated nonenzymatically (addition of cyanide) due to a transmembrane shift of K^+ in the presence of valinomycine or due to a similar shift of H^+ in the presence of an uncoupler-protonophore. ANS$^-$ is fluorescent when it is present in the membrane of mitochondria or SMP. When, on the other hand, ANS$^-$ leaves the organelles and becomes very diluted in the surrounding "ocean" of the bathing solution, its concentration in the membrane falls, and fluorescence decreases. If the nonenzymatically produced transmembrane potential is negative inside the mitochondrium or SMP, fluorescence decreases, because ANS$^-$ is leaving the structure simultaneously with the effluxing K^+ or H^+ ions.
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And vice versa, if the nonenzymatically produced potential is positive inside, fluorescence increases, because ANS⁻ is entering the structure simultaneously with the influxing positive ions. During an enzymatically generated trans-membrane potential (respiration and ATP hydrolysis), ANS⁻ fluorescence decreases, indicating that the electrical charges are negative inside and positive outside the mitochondrial membrane. Thus, recording changes in the fluorescence of ANS⁻ constitutes a sensitive method of determining differences in mitochondrial membrane electrical potentials.

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"ATP-Induced Conformation Changes in Mitochondrial Membranes Investigated by
the Method of Spin Probing"

Abstract: It is generally believed that oxidative phosphorylation in mito-
chondria is accompanied by changes in the conformation of the corresponding
enzyme systems. However, the occurrence of these changes has never been
definitively proven. The object of this study was to detect -- by means of
spin probing with neutral, nonpolar molecules -- conformation changes in mito-
chondrial membranes and submitochondrial particles during their activation with
ATP. The study material was obtained from cattle hearts; the test substance,
a radical, was of synthetic origin. The results of spectrographic analysis
showed increased solubility of the radical after addition of ATP, which in-
dicated conformation changes in membrane lipoproteins. Furthermore, a lowered
pH produced similar spectral changes, suggesting that an increased concentra-

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tion of protons can induce conformation changes in which the number of nonpolar groups on the "exposed" portion of the mitochondrial lipoproteins increases.

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