BOBOKHODZHAYEV, I. Ya.

UDC: 616-362(470.26-22)

CENTRALIZATION OF MEDICAL CARE IN RURAL AREAS (ON THE MODEL OF KALININGRADSKAYA OBLAST)

[Article by V.P. Fofanov, I.Ya. Bobokhodzhayev, M.R. [illegible], I.A. Volkova, V.M. Rychkov, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, USSR Ministry of Health, Moscow; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 1, 1973, submitted 3 August 1972, pp 18-23] .

The program of the CPSU provides for meeting in full the demands of the urban and rural population with respect to all forms of highly qualified medical care. The need for bringing the level and quality of medical care in rural areas closer to the level provided to urban regions was indicated in the decision of a session of the USSR Supreme Council (June, 1968) and Decree of the Central Committee of the CPSU and USSR Council of Ministers, No 517 dated 5 July 1968: "On Measures for Further Improvement of Public Health and Development of Medical Science in the Country"; this was also discussed at the 24th Congress of the CPSU.

The system of medical care based on the principle of stage development and combining a set of therapeutic and prophylactic institutions, provides the rural population with all forms of qualified specialized medical care. More than 100,000 different therapeutic and prophylactic institutions participated in implementing this task in 1971; they included more than 13,000 hospitals, 247 of them oblast hospitals (regional, republic level), 2,699 central rayon, 789 rayon (numbered), and 11,051 rural district hospitals.

The existing system of public health organization has made it possible to eliminate almost entirely the difference between availability of hospital care for the rural and urban population. This is achieved, to some extent, by hospitalization of rural residents in urban hospitals. In some republics, more than 40 percent of the rural population was hospitalized in urban hospitals in 1970. For the USSR as a whole, an average of 204 per 1,000 rural residents were hospitalized, and this applied to 207 per 1,000 urban residents.

JPRS 58275
21 Feb 73

UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--ADAPTATION TO THE CONDITIONS OF HIGHLAND AREAS IN THE PAMIRS -U-

AUTHOR--MASHKOVSKIY, V.G., BOBOKHODZHAYEV, M.KH.

COUNTRY OF INFO--USSR

SOURCE--VOENNO-MEDITSINSKII ZHURNAL, JAN. 1970, P. 45-48

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALTITUDE ADAPTATION, CARDIOVASCULAR SYSTEM, BIOELECTRIC PHENOMENON, CARDIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0616 STEP NO--UR/0177/70/000/000/0045/0048

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UNCLASSIFIED

Acc. Nr: AP0047123 Abstracting Service: INTERNAT. AEROSPACE ABST. Ref. Code: 5-78 UR0177

A70-25179 # Adaptation to the conditions of highland areas in the Pamirs (Adaptatsiia k usloviiam vysokogornykh raionov Pamira). V. G. Mashkovskii and M. Kh. Bobokhodzhaev. *Voenno-Meditsinskii Zhurnal*, Jan. 1970, p. 45-48. In Russian.

Study of the function of the cardiovascular system of a group of 250 healthy young men exposed in the Pamirs to altitudes of 2200, 3600 and 4200 m for periods from 2 days to 3 years. The electrical and mechanical cardiac activity manifestations and their interdependence are investigated in the subjects by simultaneous EKG and phono-KG recordings under various hypoxic conditions. The development of various subjective and objective—mostly temporary—disorders, such as dryness in the mouth, bad sleep, nausea, shooting pain in the heart, and dyspnea, is noted during the adaptation period. Also noted are overextended systoles and diastoles and a sinusoidal bradycardia during the first month of exposure.

V.Z.

REEL/FRAME
19790616

USSR

UDC: 662.215.1

DUBOVIK, A. V., GONCHAROV, A. A., and BOBOLEV, V. K., Moscow

"Approximate Physical Model of Low-Velocity Detonation in Liquids"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 521-529

Abstract: The authors study a single-dimensional problem associated with the propagation of a self-maintaining wave disturbance in a chemical reaction free, unbounded, two-phase medium (liquid with gas-filled bubbles) which is represented in the form of a set of interstratifications which are divided by gas intervals and oriented normally with respect to the propagation of the wave. The parameters of the indicated wave disturbance are calculated, taking into consideration the particulars of the impact compression of the bubbles. This is done using the hypothesis that the reaction can take place only between the intervals of the interstratifications. The analogy with low-velocity detonation is obvious from the studied physical picture of the process.

USSR

UDC 662.217.7

ANDRIANKIN, E. I., BOBOLEV, V. K., DUBOVIK, A. V., Moscow

"Heating of a Liquid Explosive Layer under Impact"

Novosibirsk, Fizika goreniya i vzryva, Vol 8, No 3, 1972, pp 408-416

Abstract: A study was made more precisely to define the maximum temperature of a liquid explosive layer under impact. The kinetics of this phenomenon are explained and the experimental procedure and theoretical analysis are described.

The layer of investigated liquid was placed between two coaxial steel rollers 15 mm in diameter. A wire strain gage was wound on the lower roll. Impact was applied to the upper roll by a 5 kg weight at a rate of 1-2 m/sec. Oscillograms are presented for various impact rate demonstrating that the maximum pressure on impact p_{max} is very close to p_i forthe case of "idle" impact.

When calculating the maximum temperature in the liquid explosive layer under impact it is necessary to consider not only the thermal conductivity but also the relation between the viscosity of the liquid and the temperature. For standard laboratory experimental conditions, the calculated values of the maximum temperature were an order lower than for adiabatic warming and did not exceed the characteristic ignition point of nitroglycerine. Although the viscosity of the liquid explosive also depends on pressure, the maximum temperature is reached

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ANDRIANKIN, E. I., et al., Fizika goreniya i vzryva, Vol 8, No 3, 1972, pp 408-416

on the periphery of the striker where the pressure is close to normal. Therefore, consideration of the dependence of the viscosity on the pressure does not lead to a noticeable increase in the maximum temperature.

USSR UDC 622.4+541.12.03

AFANAS'YEV, G. T., BOBOLEV, V. K., KAZAROVA, YU. A., and KARABANOV, YU. F. (Moscow)

"Local Heat Formation During Impact Destruction of Thin Layers"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 299-306

Abstract: The authors studied specimens pressed from ground crystalline iron citrate hydrate for purposes of observing the thin layer destruction pattern in materials mechanically similar to explosives. It was found that after impact destruction, bands appear on the contact surfaces which can be regarded as the lines of intersection of these surfaces. To establish the mechanical similarity between iron citrate and explosives, the pressure was measured during impact with disks of varying thickness. The resultant pressure oscillograms are analogous to those for solid explosives.

A derivatographic study was made of the initial substance and part of a specimen after impact for a qualitative understanding of the chemical processes in iron citrate during heating. The heating rate was 15° per

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AFANAS'YEV, G. T., et al., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 299-306

minute. Iron citrate loses first one molecule ($\sim 130^{\circ}$), then the two remaining water molecules ($\sim 165^{\circ}$ C). There is appreciable decomposition and darkening already during the loss of the first molecule of crystallized water. Experiments with mechanical mixtures of iron citrate with citric acid, polymethyl methacrylate, ammonium perchlorate, trotyl, etc. showed the same destruction mechanism. The destruction process during Bowden-Kozlov testing was briefly considered.

Electrical conductivity studies in experiments with the ionic compounds NaCl, $AgNO_3$, and NH_4NO_3 showed that destruction is accompanied by the appearance of conductivity only for rather thin specimens but that the loss or absence of conductivity does not necessarily rule out the existence of a melt on the destruction surfaces. Tests with low-molecular organic substances and polymers revealed conductivity during destruction in the thin layer region. The conductivity is undoubtedly due to heating-up on the destruction surfaces.

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III. SHOCK WAVES IN LIQUIDS

Andriankin, E. I., V. K. Bobolev, and A. V. Dubovik. Collapse of an elliptic cavity and explosive initiation in a liquid layer under shock effect. ZhPMTF, no. 5, 1971; 78-85.

Analytical and experimental results are given on the effect of shock excitation of a combustible liquid volume. Criteria are developed for the threshold conditions under which a nominally spherical fluid volume shifts to an elliptical form, and on further compression develops into a cumulative jet; in the limit this results in detonation from adiabatic heating of gas evolved in the volume. Test data on shock generation of jets in liquid nitroglycerine are included, and show qualitative agreement with theoretical results.

Shtessel', E. A., K. B. Pribytkova, and A. G. Merzhanov. A numerical solution to the problem of a thermal explosion with free convection taken into account. FGIV, no. 2, 1971, 167-178.

The authors cite previous works in which the effect of free convection on a gas explosion process is expressed in terms of the Rayleigh (Ra) and Frank-Kamenetsky (δ) criteria. The analysis is extended here to the case of liquid fuel combustion, and is presented as a supplement to earlier experimental work by Merzhanov and Shtessel' (FGIV, no. 1, 1971) in which an empirical correlation between Ra and δ was obtained. The model used assumes an ideal stationary fluid in a uniform semi-infinite vessel; gas evolution is neglected. The results are shown graphically, indicating the conditions under which convection will or will not affect the detonation process.

BOBOLEV, V.K.

USSR UDC:215.5+662.23

DUBOVIK, A. V., BOBOLEV, V. K., MALEGA, N. S., Moscow

"Influence of Configuration of Gas-Filled Cavities in Nitroglycerine Charges on its Shock Sensitivity"

Novosibirsk, Fizika Goreniya i Vzryva, No 3, 1971, pp 412-418.

Abstract: Recent works have presented detailed studies of the mechanism of excitation of an explosion, considering the sensitizing role of gas inclusions for shock initiation of liquid explosives. The primary role in the initiation of the explosion, according to the mechanism suggested in these studies, is that of the effects accompanying the interaction of accumulative stream of fluid with the wall of a collapsing cavity. It was demonstrated that if the parameters of collapse and the state of the gas in the cavity satisfy a number of necessary conditions, the rate of collision of the stream with the cavity for nitroglycerine required for excitation of the explosion is over 100 m/sec. This article presents a study of the collapse of gas-filled cavities of the simplest elliptical shape. When an elliptical cavity collapses, due to the presence of sectors with various degrees of curvature, the conditions of excitation of the stream are more favorable than in the cylindrical case. The sensitivity of the

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UDC: 215.5+662.23

DUBOVIK, A. V., BOBOLEV, V. K., MALEGA, N. S., Novosibirsk, Fizika Goreniya i Vzryva, No 3, 1971, pp 412-418.

nitroglycerine is determined as a function of the type of gas filling the cavity, placement of the cavity beneath impact hammer and the shape of the cavity.

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USSR UDC 532.595.2

ANDRIYANKIN, E. I., BOBOLEV, V. K., DUBOVIK, A. V., Moscow

"Collapse of an Elliptical Cavity and Excitation of an Explosion in a Layer of Liquid by an Impact"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 78-85.

ABSTRACT: Experiments have shown that an initially circular bubble is slightly displaced or converted to an elliptical bubble during the process of collapse, further compression of which causes the appearance of cumulative streams. This process if of interest for the study of the wear of surfaces in a cavitating stream and in the analysis of the sensitivity of liquid explosives to impacts. The development of cumulation can be conveniently studied by making the cavity elliptical in advance or by displacing a circular cavity relative to the axis of impact, thus creating a pressure field asymmetrical relative to its center. This work presents some theoretical considerations on the nature of the cumulative stream which develops in an elliptical or displaced cavity and its influence on the excitation of explosion of liquid explosives due to the formation of small drops in the adiabatically heated gas within the cavity. The experimental data on the time of formation of streams and the frequency of explosions of nitroglycerin qualitatively confirm the theoretical statements.

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USSR

UDC 622.235:662.242.001.5

GLAZKOVA, A. P., and BOBOLEV, V. K., Institute of Chemical Physics, USSR Academy of Sciences

"Effect of Organophosphorus Salts on the Combustion of Ammonium Perchlorate"

Moscow, Doklady Akademy Nauk SSSR, 1971, Vol 197, No 4, pp 883-887

Abstract: The most effective inorganic catalyst for the combustion of ammonium chlorate had appeated to be the dihydrate of copper bichromate, from which it was concluded that the addition of organometallic salts to the perchlorate would strongly affect the combustion, the metal ion beformed during combustion of the salt or its acid being present in finely dispersed form. Meanwhile, the great effectiveness of organic iron-containing salts in the combustion of mixed fuels based on ammonium chlorates was already known.

In the present study, attention was directed to organometallic salts of benzoic, salicylic and other acids as catalysts of the combustion in question. It was found that only the benzoates of sodium and lithium would intensify combustion at 50 atm. As distinct from these sodium salts, fuchsin was found to intensify combustion by a factor of 1.4 with application of 300 atm pressure (at other pressure levels, there was marked retardation). A number of copper compounds were also studied.

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USSR

GLAZKOVA, A. P., and BOBOLEV, V. K., Doklady Akademy Nauk SSSR, 1971, Vol 197, No 4, pp 883-887

Tabular data on pressures and several different combustion factors accompany the paper.

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USSR

ANDRIANKIN, E. I., BOBOLEV, V. K., and DUBOVIK, A. V. (Moscow)

"The Collapse of a Cylindrical Cavity in a Layer of Liquid Upon Impact"

Moscow, Zhurnal Prikladnoy Makhaniki i Tekhnicheskoy Fiziki, No 6, 1970, pp 98-106

Abstract: The article deals with the case of an impact upon a thin annular layer of liquid with a gas-filled cavity.

The solution of the problem is reduced to the integration of a system of two conventional first-order differential equations. A qualitative analysis of the equations is carried out, and some precise solutions are found. Note is taken of cases of pulsation of the cavity, the influence of counterpressure and viscosity is investigated. The obtained experimental data coincide with the numerical calculations conducted in the paper.

The problem of the collapse of a cavity liquid is one of the fundamental problems of hydrodynamics. It is not only of theoretical but also of practical interest, since the collapse of cavities takes place frequently in the lubrication layer of bearings, in cavitation, in testing of the

USSR

ANDRIANKIN, E. I., et al., Zhurnal Prikladnoy Makhaniki i Tekhnicheskoy Fiziki, No 6, 1970, pp 98-106

sensitivity of liquid explosions to impact, etc. The analysis of these questions is dealt with by a number of papers in which the collapse of a spherical cavity is investigated. The present paper deals rather with the case of an impact with a velocity of w_o upon an angular layer of liquid with a thickness of h_o with an external radius a and an internal radius b. The solution of this problem is somewhat more complex than in the case of the collapse of a spherical bubble due to the presence of the axial component of velocity, the finite value of the striker radius a, and the layer thickness, which is variable with respect to time.

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1/2 048 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CUMULATIVE JETS ARISING DURING SHOCK INDUCED COLLAPSE OF CAVITIES IN THIN FLUID LAYERS -U-

AUTHOR-(02)-BUBOLEV, V.K., DUBOVIK, A.V.

COUNTRY OF INFO--USSR

B

SOURCE--PMTF, ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNICHESKOI FIZIKI, MAR.-APR. 1970, P. 148-151

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS JET, SHOCK WAVE, FLUID FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1401 STEP NO--UR/0207/70/000/000/0148/0151

CIRC ACCESSION NO--AP0133353

UNCLASSIFIED

2/2 048 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133353

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF A HIGH SPEED MOTION PICTURE PHOTOGRAPHY STUDY OF THE DYNAMICS OF SHOCK INDUCED COLLAPSE OF AIR CAVITIES IN THIN LAYERS OF VARIOUS FLUIDS. IT IS FOUND THAT DURING THE COURSE OF COLLAPSE THE CIRCULAR SHAPE OF THE CAVITY SURFACE IS ARBITRARILY IMPAIRED, AND HIGH VELOCITY CUMULATIVE JETS ARISE. THE JET PARAMETERS ARE MEASURED AS A FUNCTION OF THE INITIAL CONDITIONS OF THE EXPERIMENTS.

UNCLASSIFIED

USSR

UDC 539.376

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

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

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

Abstract: Results of investigating the structural change and properties of polycrystalline nickel in relation to rate and degree of pre-strain are presented. Pure nickel (99.99%) in the form of strip rolled at room temperature was used which was annealed at 900°C for one hour in a vacuum resulting in a grain size of 0.3 mm. Loading the samples was accomplished in a special unit at 200°C up to various degrees of strain with rates of 0.2 and 1×10^3 kg/mm^2-hr followed by elongation at room temperature at the rate of 30 mm/sec. Electrical resistance was measured after cooling to 77°K. It was found that for relatively rapid rates of loading, principles governing change of resistance to deformation, electrical conductivity, and dislocation structure are observed which are normal for fcc crystals. For slower

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USSR

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

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

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USSR

UDC 533.95:538.4

BOBOROV, Yu. K., VAKULENKO, S. Ye.

"On Calculating the Drop in Ionization Energy and Pressure Due to Coulomb Interaction in an Air Plasma"

Vestn. Kiyev. politekhn. in-ta. Ser. elektroenergetiki (Herald of Kiev Polytechnical Institute. Electroenergetics Series), 1972, No. 9, pp 18-23 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G70)

Translation: The necessity for taking into account Coulomb interaction in a plasma in calculating the composition of an air plasma on the basis of the Saha equation is discussed. The Debye radius for screening and the drop in ionization energy and pressure in an air plasma was calculated in the temperature range $T = 10^4 - 10^5$°K and the pressure range $P = 0.01$-100 atm. A system of equations was derived, including the Saha equation, the Dalton equation, the equation for macroneutrality and the relative content of nitrogen and oxygen in the air. The numerical solution of the equation considering the drop in ionization energy and pressure determines a new composition for the air plasma.

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Acc. Nr: AP0037243

Ref. Code: UR 0301

PRIMARY SOURCE: Voprosy Meditsinskoy Khimii, 1970, Vol 16, Nr 1, pp 87-90

THE STUDY OF FATTY ACID OXIDATION IN HEART MUSCLE OF NORMAL ANIMALS AND AT EXPERIMENTAL MYOCARDITIS

I. L. Boboshko, M. D. Grozdova

Institute of Pharmacy USSR Academy of Medical Sciences

The oxidation of butyric and palmitic acids by raboit heart mitochondria was studied. The oxidation of butyric acid as distinct from palmitic acid does not depend on carnitin addition into the incubation mixture. The rate of buryric acid oxidation is depended on the season of the year. At the experimental adremaline myocarditis the inhibition of fatty acid oxidation by 2—3 times was noted.

D.r.

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REEL/FRAME
19730170

USSR

UDC 621.375.82

BOBOVICH, Ya. S., BORTKEVICH, A. V.

"Experimental Study of the Resonance Effect of the Scattering of Light in Polymethine Pigments"

V sb. Nelineyn. protessy v optike. (Nonlinear Processes in Optics-collection of works), Vyp. 2, Novosibirsk, 1972, pp 166-178 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D872)

Translation: The basic experimental results are presented for the resonance interaction of the radiation of a monopulse and picosecond ruby laser with molecules of polymethine pigments in rigid (vitrefied or crystallized at 77°K) matrices. In the case of intense irradiation of the vitreous solutions, a complex spectrum was observed which contained continuous and discrete components. It was demonstrated that the continuous radiation can be identified as the pigment generation band. The discrete lines in the observed spectra belong to the resonance induced Raman emission. Indirect attributes were pointed out by which a number of lines of the resonance induced Raman emission can be considered scattering of the light by the molecules in the first excited singlet state. The hypothesis was stated that some of the observed lines belong to the scattering spectrum at the oscillatory levels of the lower triplet state of the pigment molecules. The bibliography has 18 entries.
1/1

Acc. Nr: AP0055936 Abstracting Service: CHEMICAL ABST. 6/70 Ref. Code: 4A0386

116491b Resonance effects of light scattering in cryptocyanine. Bobovich, Ya. S.; Bortkevich, A. V. (USSR). *Pis'ma Zh. Eksp. Teor. Fiz.* 1970, 11(2), 83–8 (Russ). The spectra of cryptocyanine (I), vitrified in glycerol and crystd. out in Me_2CO, tetrahydrofuran, and $HCONMe_2$, in the concns. of 10^{-6}–$0.5 \times 10^{-4}M$, were investigated. The solns. were frozen at 77°K. The beam of a ruby laser (20 MW) was focused sharply on the sample and the scattered radiation was obsd. by a spectral device with a reciprocal dispersion of 12 cm^{-1}/mm. The lines (very narrow for the cryst. matrixes) of various intensities, similar to those found at somewhat higher frequencies in the ir absorption spectrum of I (400–2500 cm^{-1}, measured as KBr pellet), were obsd.; a doublet at 604 and 610 cm^{-1} was characteristic of all samples. In addn., the generation bands of the dye, the frequencies and characters of which depended on the concn., were obsd. In any case, only the lines reaching the generation band or lying close by it appeared. The spectra obtained are attributed to the resonance stimulated Raman scattering and resonance stimulated Rayleigh scattering of the line branch in electron-excited states of the mols., realized by a nontrivial scheme of the "from above down" transitions. The Stokes broadening (~10 cm^{-1}) of the stimulated Raman lines was obsd. at the max. output of the spectra excitation.

J. Moravec

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REEL/FRAME
19841265

Acc. Nr: AP0050428

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: 4R0051

95017j Induced Raman spectra within and near the fundamental absorption bands. Bobovich, Ya. S.; Bortkevich, A. V. (USSR). *Opt. Spektrosk.* 1970, 28(1), 112–15 (Russ). Induced Raman spectra of stilbene, tolan, naphthalene, C_6H_6, PhCl, MePh, styrene, and CS_2 at liq.-N temps. were investigated. The spectra were excited by the 3471-Å line, with an output of 1 MW (the harmonic of ruby laser). An ISP-66 quartz spectrograph was used. For stilbene, the exciting line is in the region of an absorption band and the compd. luminesces; induced Raman line at 1590 cm^{-1}, with a relatively low intensity and a high generation threshold, is generated simultaneously. The section of spontaneous Raman radiation, in comparison with the spectrum excited by the fundamental line of the ruby laser (6943 Å), increases $\sim 10^4$ times owing to the absorption losses of exciting radiation, competition of induced Raman radiation with the luminescence, and possible effect of the 2-photon absorption. Induced Raman lines at 2225 and 1380 cm^{-1} of tolan and naphthalene, resp., have high intensities. The spectra of other compds. consist mostly of 2 or 3 lines, at 990 and 3065 for C_6H_6, 1005, 2920, and 3035 for MePh, 1000 for PhCl, and 990 and 1610 cm^{-1} for styrene. Induced Raman spectra of CS_2 as well as of

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REEL/FRAME
19810406

21

AP0050428

$CHBr_3$, *o*-$C_6H_4Cl_2$, *p*-$C_6H_4Br_2$, biphenyl, bromobiphenyl, 4,4'-dibromobiphenyl, bromodimethylaniline, quinoline, anthracene, and diphenylbutadiene were not obtained. A decrease of the generation thresholds of induced Raman radiation and an increase of transformation coeff. of the radiation owing to the resonance effect can hardly be reached. Refrigeration to the liq.-He temp. may give pos. results.

J. Moravec

2/2

19810407

1/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PERTURBED TOTAL INTERNAL REFLECTION SPECTRA OF LIQUID CRYSTALS -U-

AUTHOR-(03)-ZOLOTAREV, V.M., BELYAYEVSKAYA, N.M., BOBOVICH, YA.S.

COUNTRY OF INFO--USSR

B

SOURCE--OPT. SPEKTROSK. 1970, 28(1), 195-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IR REFLECTANCE, PERTURBATION, LIQUID CRYSTAL, LIGHT REFRACTION, LIGHT REFLECTION, AMINE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1784 STEP NO--UR/0051/70/028/001/0195/0197

CIRC ACCESSION NO--AP0112770

UNCLASSIFIED

2/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112770

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFRARED MULTIPLY PERTURBED TOTAL INTERNAL REFLECTION (MPTIR) WAS USED TO STUDY THE LIQ. CRYSTAL STATE. THE MPTIR METHOD DEPENDS ON THE PENETRATION OF A LIGHT RAY INTO AN OPTICALLY LESS DENSE MEDIUM DURING REFLECTION AT A 2 PHASE BOUNDARY AT INCIDENT ANGLES LARGER THAN THE CRIT. ANGLE. AN EXPT. WITH 8,(PHENYLAZO),N,ANISAL,1,NAPHTHYLAMINE IS GIVEN AS AN EXAMPLE OF SUCH A MEASUREMENT.

UNCLASSIFIED

1/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--LINE STRUCTURE OF THE SECONDARY LUMINESCENCE SPECTRUM OF VITRIFIED CRYPTOCYANINE SOLUTIONS -U-

AUTHOR-(03)-BORTKEVICH, A.V., BOBOVICH, YA.S., BELYAYEVSKAYA, N.M.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 688-94

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS, METHODS AND EQUIPMENT

TOPIC TAGS--LUMINESCENCE SPECTRUM, GLYCEROL, IR SPECTRUM, LASER EXCITATION, RAMAN SPECTRUM, PHOTOGRAPHIC CHEMICAL, IODINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0846 STEP NO--UR/0051/70/028/004/0688/0694

CIRC ACCESSION NO--AP0124511

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISCRETE SPECTRA OF SECONDARY LUMINESCENCE OF CRYPTOCYANINE (I) IN VITRIFIED GLYCEROL MATRICES WERE STUDIED AT THE LIQ. N TEMP. AT GREAT DISPERSION. THE IR ABSORPTION SPECTRUM OF I WAS OBTAINED BY PRESSING THE SUBSTANCE IN KBR. BY COMPARING THESE 2 SPECTRA AND ALSO THE RESULTS OF EXPERIENCES IN WHICH THE POSITION OF THE EXCITED LINE OF THE LASER WAS CHANGED BY VARYING THE TEMP. OF THE ROO, THE DISCRETE PART OF THE LUMINESCENCE SPECTRA BELONGED TO THE RESONANCE STIMULATED RAMAN SPECTRA ACCORDING TO THE SCHEME UPPER TO LOWER TRANSITIONS.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INDUCED PROCESSES OF SCATTERING AND LUMINESCENCE IN CRYSTALLIZED SOLUTIONS OF CYANINE DYES -U-

AUTHOR-(02)-BOBOVICH, YA.S., BORTKEVICH, A.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 474-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--DYE, RAMAN SPECTRUM LUMINESCENCE, LASER EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0803 STEP NO--UR/0051/70/028/003/0474/0479

CIRC ACCESSION NO--AP0119710

UNCLASSIFIED

2/2 039 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LASER INDUCED RAMAN SPECTRA OF CYANINE DYES SOLNS. CRYSTD. AT LIQ.,N TEMP. WERE STUDIED. THUS, 1,1 PRIME,DIETHYL,4,4 PRIME,CARBOCYANINE IODIDE (I) AND 1,1 PRIME,DIETHYL,2,2 PRIME,DICARBOCYANINE IODIDE (II) WERE DISSOLVED IN ME SUB2 CO, TETRAHYDROFURAN, AND DIMETHYLFORMAMIDE, RESP., IN CONCN. 10 PRIME NEGATIVE6 10 PRIME NEGATIVE4 M. THE POSITION OF THE RAMAN LINES DEPENDS ON THE SOLVENT USED; SOME LINES ARE NOT ONLY SHIFTED BUT ALSO SPLIT. AU ANOMALOUS CONCN. SHIFT WAS OBSD. FOR THE EXCITING LINE OF I IN ME SUB2 CO. IN THE MIXED SOLNS. OF I AND II (4:1, 8:1, AND 40:1) IN TETRAHYDROFURAN, ONLY COMPD. II SHOWS VERY STRONG LINES, PROBABLY OWING TO THE COMPETITION OF THE SOLUTES.

UNCLASSIFIED

USSR

UDC: 535.375.01

RAUTIAN, S. G., BOBOVICH, Ya. S.,

"Concerning Some Particulars of Raman Scattering"

Leningrad, Optika i Spektroskopiya, Vol 34, No 3, Mar 73, pp 617-619

Abstract: The authors discuss the recently disccvered experimental effect of Raman scattering by excited molecules with emphasis on two peculiarities of the phenomenon: 1. the initial and final states of the molecules participating in the scattering have greater energy than the intermediate state; 2. some of the Raman lines spectrally overlap with a luminescence band. As a rule, these Raman lines are shaded by lines of "attenuation" or show up only in absorption (in the "negative"). On the other hand, the Raman lines lying outside the luminescence band correspond to emission; i. e., they usually show up in the "positive". It is shown that "interference" of Raman scattering and luminescence could lead to "negative" structures. The proposed explanation for "negativization" of Raman lines is universal in nature and should hold in molecular systems.

1/1

BOBOVNIKOV, N. D.

JPRS 55879

4 May 1972

INFLUENCE OF SEMIFABRICATE-PRODUCTION TECHNOLOGY ON THE MECHANICAL CHARACTERISTICS OF HEAT-RESISTANT ALLOYS

UDC 539.5

[Article by A. F. Belov, N. D. Bobovnikov, and O. Kh. Fatkullin (Moscow) of VILS (possibly All-Union Laboratory of Alloy Research; Kiev, Problemy Prochnosti, Russian, No 6, 1971, signed to press 20 August 1970, pp 105-109]

Changes in Engine Material Specifications in Recent Years

Progress in aviation equipment presents ever higher demands on the materials used in making engines. Materials used widely in engine structures.

The departure point in developing and organizing the production of heat-resistant materials was the development of jet engines, which have replaced piston engines on aircraft. In recent years many heat-resistant alloys have been developed which permit engine operating temperature to be raised considerably.

Vacuum melting of metals has brought much progress in the area of producing deformable alloys.

The dynamics of change in engine-alloy content on various bases over a 15-year period are shown in Table 1. The

Table 1

Years	Aluminum-based alloys, %	Titanium-based alloys, %	Steels (Fe-base), %	Nickel-based alloys, %
1950	20	0	70	10
1955	3	2	85	10
1960	1	12	34	53
1965	2	23	15	50

USSR

UDC 539.5

BELOV, A. F., BOBOVNIKOV, N. D., FATKULLIN, O. KH., Moscow. VILS (expansion unknown)

"The Influence of the Production Technology of Semifinished Products on the Mechanical Properties of Heat-Resistant Alloys"

Kiev, Problemy Prochnosti, No. 6, 1971, pp 105-109

Abstract: The critical factor in the development and organization of the production of heat-resistant materials was the development of jet engines, which replaced piston engines on aircraft. Considerable progress in the field of the production of deformable alloys has been made due to the introduction of the vacuum melting of metal. Vacuum melting is an important stage in improving the properties of heat-resistant alloys. One of the basic factors limiting the operating capacity of an engine is the quality of the turbine disks. Up to 1962, turbine disks in the USSR had been produced from open-melted metal, and this process had many drawbacks. A radical change took place with the introduction, in 1962, of the vacuum arc remelting process, which resulted in metal of improved quality with high and stable mechanical properties. At present there has been developed a basically new technique for obtaining nickel-based heat-resistant alloys in which the

USSR

BELOV, A. F., et al., Problemy Prochnosti, No 6, 1971, pp 105-109

defects of the duplex process are eliminated. The essence of this technique consists in the employment, during the vacuum arc remelting process, of electrodes produced by powder metallurgy on the basis of carbonyl nickel powder. Further improvement in metal quality is provided by the electron-beam remelting of nickel alloys, which has very recently been developed. 6 tables.

2/2

USSR

UDC: 539.3

BOBRITSKAYA, S. D., KVITKA, A. L., Kiev

"Determination of Stress Concentration in a Plate Around a Small Aperture in the Three-Dimensional Statement of the Problem"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 47-49.

Abstract: The problem is stated as follows. A circular plate with external circumference of rather large radius is cut from an "infinite" plate with an aperture of radius a. It is assumed that stresses around the circumference are the same as in a plate without apertures. The equations for elastic equillibrium of bodies of rotation, based on the variation-difference method, are used for a new approach to the solution of the problem of the influence of circular apertures on stress distribution in a plate in extension. The results of numerical solution of this problem based on equations of the three-dimensional problem of the theory of elasticity are presented and compared with the precise analytic solution.

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USSR

UDC 661.183.6+549.623.5

SHMELEV, G. A., SERDYUKOV, V. I., and BOBR-SERGEYEV, A. A., Ivanovo Chemico-Technological Institute, Department of Silicate Technology

"Synthesis of Lithia Mica in Eutectic Fluoride Fusions"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XIII, No 10, 1970, pp 1,496-1,499

Abstract: Existing methods of synthesizing mica either yield an inadequate amount of high-quality crystals, or are too complex technologically.

To find new methods, the authors studied experimentally the synthesis of taeniolite ($KMg_2Li[Si_4O_{10}]F_2$) from solution in a fused mixture of fluorides. The initial charge consisted of quartz sand, periclase, MgF_2, LiF, K_2SO_3, to which were added large amounts (more than 12% by weight) of fused fluorides (double mixtures of eutectic composition).

Data on the composition of the mica obtained indicate that this is a very promising method of synthesis.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CHANGES OF THE FUNCTIONAL STATE OF THE SYMPATHICO ADRENAL SYSTEM AND ANTICOAGULATION SYSTEM IN HYPERTENSIVE PATIENTS IN THE COURSE OF

AUTHOR--BOBRIK, M.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 12-15

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, URINE, CATECHOLAMINE, FIBRINOLYSIS, HEPARIN, ANTIHYPERTENSIVE AGENT, ADRENAL GLAND, BLOOD COAGULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1722 STEP NO--UR/0475/70/000/005/0012/0015

CIRC ACCESSION NO--AP0129090

UNCLASSIFIED

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0129090 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS INDICATE THAT AT ALL STAGES OF HYPERTENSIVE DISEASE DEPRESSIN TREATMENT FAVOURED NORMALIZATION OF THE URINARY EXCRETION OF CATECHOLAMINES, FIBRINOLYTIC ACTIVITY AND FREE BLOOD HEPARIN, EVIDENCING THUS RESTORATION OF THE FUNCTIONS OF THE SYMPATHICO ADRENAL AND ANTICOAGULATING SYSTEMS. IT IS CONCLUDED THAT DEPRESSIN IS A VALUABLE DRUG FOR THE TREATMENT OF HYPERTENSION AT THE SAME TIME FAVOURING NORMALIZATION OF MANY ORGANS AND SYSTEMS INCLUDING THE SYMPATHICO ADRENAL AND ANTICOAGULATING SYSTEMS.

FACILITY: KIYEVSKOGO INSTITUTA USOVERSHENSTVOYANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC: 621.321.772(088.8)

ZEMLYAKOV, A. P., BOBRIN, V. Ye., BOL'SHAKOV, O. V.

"A Device for Discrete Measurement of Signal Phase"

USSR Author's Certificate No 254630, filed 3 Jun 68, published 11 Mar 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A294 P)

Translation: This Author's Certificate introduces a device for discrete measurement of signal phase. The device contains frequency dividers based on flip-flops, and also logic circuits. As a distinguishing feature of the patent, the accuracy of phase measurement is improved, and speed requirements for the divider of the first digital place are lowered by connecting the output of the input signal shaper through an inhibit circuit to the counter input of the flip-flop for the first digital place of the frequency divider and simultaneously to the input of the control device. One of the outputs of the control device is connected to the input of the inhibit circuit, and the second output is connected to one of the outputs of an OR circuit whose second output is connected to the output of the divider for the first digital place. The output of the OR circuit is connected to the input of the frequency divider for the next digital place. E. L.

1/1

USSR

B

UDC 621.374.4(088.8)

POPOV, P. S., NIKOLAYEV, A. A., BOBRIN, V. Ye., VASIL'YEV, V. M.

"A Pulse Frequency Divider"

USSR Author's Certificate No 255844, Filed 16 Nov 67, Published 12 Mar 70 (from RZh-RadioteKhnika, No 10, Oct 70, Abstract No 10G200 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a transistorized relaxation oscillator circuit which contains a delay line in the feedback circuit. To improve the conversion phase stability, the oscillator also contains a transistorized key which is connected through an emitter follower in the feedback circuit between the delay line and the oscillator transistor buse.

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1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DESIGN PRINCIPLES OF HOLOGRAPHIC MEMORY DEVICES -U-

AUTHOR-(04)-MIKAELIANE, A.L., BOBRINEV, V.I., NAUMOV, S.M., SOKOLOVA, L.Z.

COUNTRY OF INFO--USSR

SOURCE--IEEE J. QUANTUM ELECTRONICS USA), VOL. QE 6, NO. 4, P. 193-8 (APRIL 1970)

DATE PUBLISHED----APR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--HOLOGRAPHY, MEMORY ELEMENT, INFORMATION STORAGE AND RETRIEVAL, HOLOGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0072 STEP NO--US/0000/70/000/004/0193/0198

CIRC ACCESSION NO--AT0123844

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0123844

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF INFORMATION STORGAE IN A HOLOGRAPHIC MEMORY DEVICE ARE DISCUSSED: CONSECUTIVE STORAGE OF INDIVIDUAL BINARY NUMBERS ON THE SAME HOLOGRAM, AND PARALLEL STORAGE OF MASSES OF BINARY NUMBERS ON INDIVIDUAL HOLOGRAMS. OPTICAL SETUPS OF RESPECTIVE MEMORY DEVICES ARE DESCRIBED. EXPERIMENTAL RESULTS OF THE INVESTIGATION OF THESE SETUPS ARE PRESENTED. FACILITY: A.S. POPOV SOC. RADIO ENGNG. AND TELECOMMUNICATIONS, MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RECORDING A LARGE NUMBER OF IMAGES BY THE METHOD OF SUPERPOSITION OF HOLOGRAMS -U-
AUTHOR-(03)-MIKAELYAN, A.L., BOBRINEV, V.I., SOKOLOVA, L.Z.

COUNTRY OF INFO--USSR

B

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 1, 1970, P 799, 800.

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--HOLOGRAM, MAGNETIC RECORDING, PHOTOSENSITIVITY, SIGNAL TO NOISE RATIO

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1799 STEP NO--UR/0020/70/191/000/0799/0800

CIRC ACCESSION NO--AT0125411

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0125411

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE QUALITY OF IMAGES OF SIMPLE OBJECTS DURING SUCCESSIVE RECORDING OF A LARGE NUMBER OF HOLOGRAMS ON THE SAME SEGMENT OF A PHOTOSENSITIVE SURFACE. THE MAXIMUM POSSIBILITIES OF THIS TYPE OF RECORDING ARE ESTABLISHED, TAKING INTO ACCOUNT THE EFFECT OF NOISE ARISING AS A RESULT OF THE GRAININESS OF THE PHOTOEMULSIONS. IT IS SHOWN THAT THE SIGNAL, TO, NOISE RATIO IS INVERSELY PROPORTIONAL TO THE SQUARE OF THE NUMBER OF PHOTOGRAPHS AND INCREASES WITH AN INCREASE IN THE NUMBER OF LIGHT SENSITIVE ELEMENTS OF THE PHOTOSENSITIVE MATERIAL, I.E., WITH THE AREA OF THE HOLOGRAM. IT IS CONCLUDED THAT THE MAXIMUM RECORDING DENSITY DECREASES WITH AN INCREASE IN THE AREA OF THE HOLOGRAM.

UNCLASSIFIED

USSR UDC: 620.171

Sobolev, N. D., Morozov, Ye. M., Markochev, V. M., Gol'tsev, V. Yu., Sapunov, V. T., Bobrinskiy, A. P., Moscow

"Experimental and Theoretical Study of the Rupture of Sheet Materials with Cracks"

Kiev, Problemy Prochnosti, No 7, 1972, pp 45-49.

Abstract: Methods are presented for producing rupture diagrams during tensile testing of flat specimens with an initial crack. The results of testing of specimens of sheet material of various thicknesses of aluminum and titanium alloys, as well as certain steels, are studied.

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USSR

UDC: 539.3

BOBRITSKAYA, S. D., KVITKA, A. L., Kiev

"Three-Dimensional Deformation of Massive, Nonuniform Bodies of Rotation. Report I"

Kiev, Problemy Prochnosti, No 11, 1970, pp 45-48

Abstract: Massive bodies of rotation are studied in a system of axisymmetrical, orthogonal coordinates when subjected to arbitrary surface and mass forces in an arbitrary temperature field. A system of equations in displacements is formulated on the basis of the variational principle of Lagrange.

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USSR

UDC 539.3

BOBRITSKAYA, S. D. and KVITKA, A. L., Institute of Strength Problems, Academy of Sciences Ukrainian SSR

"Investigation of the Stress State of Thick-Wall Shells (Applicable to the Design of a Turbine Housing)"

Kiev, Problemy Prochnosti, No 3, Feb 73, pp 39-42

Abstract: Resolving equations, derived on the basis of the variation-difference method, for the deformation of solids of revolution under axisymmetrical actions were used for studying the stress state of turbine structural elements. A static calculation was carried out for the front section of a stream turbine housing which itself is a thick-wall shell of revolution consisting of a cyclindrical wall connected to a toroidal bottom. Isolines of displacements and stresses were drawn and an analysis of the shell stress state was made. Calculations were made on a BESM-3M computer using a program based on the block method of Gauss. With consideration of shell and load symmetry, a system of algebraic equations of the 386th order was solved. From point displacements found, the stress tensor components were calculated on the computer. 2 figures, 2 bibliographic references.
1/1

USSR

UDC: 539.3

BOBRITSKAYA, S. D., KVITKA, A. L., Kiev

"Three-Dimensional Deformation of Massive, Nonuniform Bodies of Rotation. Report 2"

Kiev, Problemy Prochnosti, No 11, 1970, pp 49-53

Abstract: Equilibrium equations and stress formulas are produced, fully describing the three-dimensional deformation of massive nonhomogeneous bodies of rotation under the influence of cyclicly symmetrical loading in arbitrary, curved triorthogonal coordinates.

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Acc. Nr. AT0050602

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code 4R0148

102897b Development of the composition of nitrided high-strength cast irons. Bobro, Yu. G.; Bykova, D. I. (Khar'kov. Politekh. Inst., Khar'kov, USSR). *Izv. Vyssh. Ucheb. Zaved., Chern. Met.* 1970, 13(1), 143–6 (Russ). The effects of alloying addns. were studied on the nitriding of 10 Ce inoculated (Fe-Ce) cast irons cast in 30-mm dry sand molds and normalized with high-temp. tempering after melting in 1–5 kg lab. elec. furnaces. Nitriding in 1, 2, and 3 stages of sample specimens of the cast irons measuring 6 × 9 × 15 mm was particularly effective on alloying with Cr–Al or Cr–Al–Mo. The optimum compn. range was Cr 0.3–0.5, Mo 0.2–0.4, Al 1.0–1.2% corresponding to ultimate tensile strength 90 kg/mm², δ = 0.7–0.8% and *HB* = 286–320, compared with 62.0 kg/mm², 1.0%, and 217 for a std. Cr–Ni diesel crankshaft steel. R. Hardbottle

REEL/FRAME
19810595

18

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES

AUTHOR-(05)-BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, O.I., BOGROV, A.B.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 315-17

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION, EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1382 STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. CU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES
AUTHOR-(05)-BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, O.I., BOBROV, A.B.
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 315-17

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION, EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1382 STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--090CT70
IRC ACCESSION NO--AP0116831
BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. GU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

F. Mathematical Problems of Semiotics

USSR

BOBROV, A. I. and ZAYTSEV, V. G.

"Algorithm for Automatic Composition of Tables for Resolution of Homonymies (Lexico-Gramatical and Lexical)"

Tr. NII Upravl. Mashin i Sistem [Works of Scientific Research Institute for Control Machines and System], 1973, No 7, pp 163-170 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V818).

Translation: An algorithm is suggested for automatic composition of tables for the resolution of homonymies (lexico-gramatical and lexical), in which the length of the surroundings of the homonym, necessary for elimination of the ambiguity of the word, the grammatical information and its nature are selected in the row being analyzed from the table of configurations composed for each type of homonym. The configurations are basically a chain of valances of a given homonym, partially compensating for the lack of a syntactical analyzer at the present stage of development.

Authors' view

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1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE AGE SPECIFIC DYNAMICS OF REMOTE SEQUELAE OF CLOSED BRAIN INJURIES -U-

AUTHOR--BOBROV, A.S.

B

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 5, PP 641-645

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, INJURY, HYPERTENSION, MENTAL DISORDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0252 STEP NO--UR/0246/70/070/005/0641/0645

CIRC ACCESSION NO--AP0117504

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0117504
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR SHOWS THAT THERE MAY BE A STABLE INCREASE OF SEVERITY IN THE MENTAL STATE OF PATIENTS AFTER A LONG PERIOD (10-20 YEARS) OF COMPENSATION DUE TO A CLOSED BRAIN INJURY. THE CLINICAL PICTURE IN SUCH CASES IS CHARACTERIZED BY A POLYMORPHIC ASTHENICAL SYMPTOMATOLOGY IN COMBINATION WITH AFFECTIVE DISORDERS AND AN APPEARANCE OF TRAITS NOT INHERENT TO PATIENTS PREVIOUSLY (ANXIETY, ETC.). AMONG THE MOST FREQUENT ACCOMPANYING DISORDERS IS ARTERIAL HYPERTENSION. IT IS BEING ASSUMED THAT IN SUCH CASES, ALONG WITH THE BRAIN INJURY AND CEREBRAL DISORDERS, A CERTAIN ROLE IS BEING PLAYED BY A RELATIVELY EARLY AND SEVERE INVOLUTIONAL PERIOD. THE MENTAL DISORDERS INFLUENCE SIGNIFICANTLY THE WORKING CAPACITY OF SUCH PATIENTS.
FACILITY: PSIKHIATRICHESKOYE OTD. TSENTRAL'NOGO N-I INSTITUTA EKSPERTIZY TRUDOSPOSOBNOSTI I ORGANIZATSII TRUDA INVALIDOV, MOSCOW.

UNCLASSIFIED

USSR UDC 612.822.087

BOBROV, A. V., Institute of Physiology, Georgian Academy of Sciences, Tiblisi

"Slow Component of the Direct Response of the Cortex to Layer-by-Layer Stimulation"

Leningrad, Fiziologicheskiy Zhurnal SSR, No 3, 1973, pp 378-384

Abstract: The surface and deeper layers of the cerebral cortex of anesthetized cats were stimulated at 200 μ intervals by an electric current (about 5 ma), producing a field of slow negative potential (SNP). After surface stimulation and derivation, the maximum values of the SNP were observed next to the stimulating electrode. They decreased with distance from the latter, disappearing completely 3 to 3.5 mm away. The amplitude of the SNP and radius of its spread along the cortical surface varied with the intensity and duration of stimulation, i.e., the reaction of the surface layers to stimulation corresponded to the degree of activation of the structural elements of the layers producing the SNP. The same elements also appear to be present in the deeper layers. More intense stimulation in the region directly under the stimulating electrode gave rise to positive potential synchronous with SNP. With layer-by-layer derivation, SNP decreased monotonically beyond the positive field with increasing distance between the stimulating and deriving electrodes, as in the case 1/2

USSR

BOBROV, A. V., Fiziologicheskiy Zhurnal SSR, No 3, 1973, pp 378-384

of layer-by-layer or surface stimulation and derivation. Thus, regardless of the levels at which the stimulating and deriving electrodes were placed (surface -- surface, surface -- lower layers, lower layers -- surface), SNP decreased monotonically the farther apart they were, disappearing entirely at 3 to 3.5 mm.

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USSR

BOBROV, A. YE., ZHURKIN, V. A.

"Minimizing the Functions of Multivalued Logic in a System Containing Cyclic Negation"

Minimizatsiya funktsiy mnogoznachnoy logiki v sisteme, soderzhashchey tsiklicheskoye otritsaniye (Minimizing the Functions of Multivalued Logic in a System Containing Cyclic Negation), Editorial Board of the Journal Avtomatika i vychisl. tekhn., Latvian SSR Academy of Sciences, Riga, 1972, 14 pp, 5-entry bibliography, manuscript at the All-Union Institute of Scientific and Technical Information, No 4294-72, Dep. 11 April 1972 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V430DEP)

No abstract

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USSR UDC 681.325.55:681.325.65

BOBROV, A. Ye.

"Parallel-Action Adder"

USSR Author's Certificate No 272672, filed 28 Aug 69, published 16 Sep 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B394 P)

Translation: A parallel-action adder containing ferrite-transistor cells is proposed. It is distinguished by the following: In order to improve the reliability and simplify the adder circuit, the buses of the first and second components are connected to the write inputs of the first cells, second cell and third cell respectively, and they are connected to the inputs of the first OR circuit, the output of which is connected to the write input of the fourth cell and to the read input of the seventh cell. The output of the first cell is connected to the read input of the third cell and to the input of the second OR circuit, to the second input of which the output of the second cell is connected. The output of the second OR circuit is connected to the write input of the seventh cell. The outputs of the third and fourth cells are connected to the inputs of the third OR circuit, the output of which is connected to the read input of the eighth cell. The carry bus from the low-order bit is connected to the

USSR

BOBROV, A. Ye., USSR Author's Certificate No 272672, filed 28 Aug 69, published 16 Sep 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B394 P)

input of the fourth cell and the write input of the fifth cell. The outputs of the fifth and sixth cells are connected to the inputs of the fourth OR circuit, the output of which is connected to the write input of the ninth cell and the read input of the tenth cell. The output of the seventh cell is connected to the read input of the sixth cell, and the output of the ninth cell is connected to the write input of the tenth cell. There is 1 illustration.

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USSR

BELOUSOVA, I. M., BOBROV, B. D., KISELEV, V. M., KURZENKOV, V. N., KREPOSTNOV, P. I.

"Photodissociative I^{127} Laser in a Magnetic Field"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy iziki, Vol 65, No 2 (8), 1973, pp 524-536

Abstract: A study was made of the effect of a magnetic field and also a number of other factors on the kinetics of the radiation spectrum of a photodissociative I^{127} laser in the $2P_{1/2}-{}^2P_{3/2}$ transition. The behavior of the spectrum of the induced radiation was investigated in the presence and absence of a magnetic field, and the superthin splitting constant of the upper operating level of the iodine atom $A_{1/2}$ was determined experimentally. A broadening of the luminescence line in the operating transition of the iodine atom during collisions with C_2F_7I molecules and also with argon and xenon atoms found. Then the corresponding broadening cross sections and the Van der Waals constants were determined for the interaction of the iodine atom with these gases. The calculated values of the frequencies and amplification factors for the most intense groups of Zeeman components were obtained with a varia-
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BELOUSOVA, I. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 65, No 2 (8), 1973, pp 524-536

tion explaining the behavior of the induced radiation spectrum with the variation of the magnetic field. The magnitude of the relaxation between sublevels with different F of the upper operating state $^2P_{1/2}$ was evaluated.

The study of the spectral composition of the induced radiation in the $^2P_{1/2}$-$^2P_{3/2}$ transition of the iodine atom showed that the radiation kinetics of the given laser, which is a complex spectral system, depends on a number of factors such as the magnitude of the magnetic field, the gas pressure in the cell, and the magnitude of the pumping energy. The characteristics of the output radiation of the laser are determined not only by the kinetics of the chemical reactions but also by the structure of the upper and lower transition states, which varies even during the oscillation pulse time. This factor must be considered when constructing various kinetic models of the photodissociative iodine laser. In turn, for a more detailed study of the behavior of the oscillation spectrum in a magnetic field the population kinetics on all sublevels of the investigated transition must be considered.

2/2

USSR UDC 678:539.4.001.2

BOBROV, B. S., Leningrad Institute of Aviation Instruments

"On a Form of the Strength Criterion of Isotropic Materials"

Riga, Mekhanika Polimerov, No 5, Sep/Oct 73, pp 847-852

Abstract: A study was made of the possibility of formulating a concrete form of the strength criterion that is more general than the square form and makes it possible to approximate experimental data with sufficient accuracy. The power form of the generalized strength criterion of isotropic media is considered. Two special cases of practical interest of the strength criterion of isotropic materials are analyzed and the possibility of the approximation of experimental data with the help of the formulated criterion is discussed. The divergence of the criterion with conducted experiments is discussed. One figures, one table, 14 formulas, 12 bibliographic references.

1/1

AA0012099

BOBROV B.S.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent,

228874 BLOOD OXYGENATOR OF THE FOAM-FILM TYPE, used in apparatuses for artificial blood circulation comprising a foam-quenching chamber, an operating chamber for foam formation, a distributor of venous blood an oxygen distributor, a filter a settling chamber and a system of connecting pipes. The object of the invention is to simplify the work of the oxygenator by excluding the processes of collecting and repeat sterilisation. This is achieved by the oxygenator being not dismountable in the form of a hermetic unit of a single use of elastic plastic, for ex., O.V.C. The distributor of the venous blood embodies a pipe (1) with a dead-end and through apertures with a guide (3) for the flow of venous blood. The guide is made of plastic or metal wire embody-

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19570898

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ing a multi-loop unit each loop of which passing through a corresponding aperture in the pipe. This allows for a simplification of the construction of the distributor of venous blood and prevents the separate jets of blood merging together when it flows from the distributor. To ensure the size of the oxygenator on the outer surface at various levels according to height there are transverse pockets for the rods of the framework with fixing screws (19) and brackets (18) for attaching to the bar (20).

25.9.67 as 1186146/31-16 B.S. BOBROV et al. The All-Union Scientific-Research Institute for Surgical Apparatuses and Instruments (10.2.69) Bul. 32/17.10.68. Class 30k, Int. Cl. A 61m.

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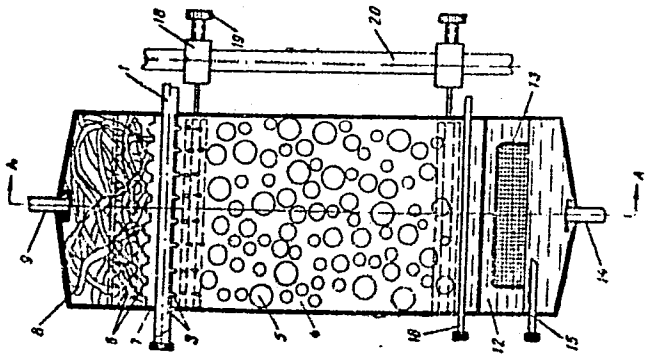
AA0012099



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USSR

UDC: 534.2

BOBROVNITSKIY, Yu. I.

"Concerning Oscillations of Some Mechanical Systems With Nonorthogonal Eigenfunctions"

Moscow, Akust. dinamika mashin i konstruktsiy--sbornik (Acoustic Dynamics of Machines and Structural Elements--collection of works), "Nauka", 1973, pp 6-9 (from RZh-Fizika, No 5, May 73, abstract No 5Zh576 by the author)

Translation: A method is presented for determining the relation of orthogonality of normal modes of a class of mechanical systems which are described by a differential equation containing a complex parameter in the form of a polynomial of degree n and by boundary conditions into which this parameter enters linearly. The orthogonality relation expresses the equality to zero of the scalar product of the n-dimensional vectors. For instance, it may be shown that normal waves are orthogonal in some solid waveguides and that resonance modes are orthogonal in moving strings and rods with special conditions of support on the ends. An orthogonality relation is derived for the resonance modes of a finite string moving at constant velocity, secured at one end and resting on an infinite string at the other end. Bibliography of 8 titles.
1/1

USSR UDC 598.826:591.543.43(591.1.04)

BLYUMENTAL', T. I.

"Development of the Autumnal Migratory State in Some Wild Passerine Birds. Bioenergetic Aspects"

Leningrad, Ekologicheskiye i Fiziologicheskiye Aspekty Pereletov Ptits, "Nauka," 1971, pp 111-182

Abstract: Typical features of the development of a number of components of the autumnal migratory state for 15 of the most widespread types of small wild passerine birds of the Kurshskaya Spit were studied on the basis of data from capture of 140,000 birds and analysis of the physiological state of 80,000 live birds during the periods of nesting, shedding, and migration. Some results are given from experimental research on their development and regulation on the Kurshskaya Spit as well as from field investigations in more northerly regions of the European part of the USSR. The adaptive significance of the components studied and possible paths of their evolution are discussed.

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CSO: 1840-W - END -

USSR

POTAPOV, R. L., (Editor)

Ekologicheskiye i Fiziologicheskiye Aspekty Pereletov Ptits (Ecological and Physiological Aspects of Bird Migrations), Leningrad, "Nauka," 1971, 244 pp

Translation: Table of Contents:

1/1

USSR

UDC: 681.325.6

BLYUMIN, S. L., IGNATENKO, A. D., MASHLYKIN, V. G., and CHERNIKHOV, Yu. V.

"Method of Analyzing a Typical Logic Element Using Thyristors"

Moscow, Avtomatika i telemekhanika, No 4, 1972, pp 162-167

Abstract: Although circuits consisting of thyristors for use in logic systems can be investigated graphically, such an analysis requires a good many diagrams. The authors of this article propose a method for analytically investigating stable modes of operation of such thyristor circuits. Using the example of a NOT circuit involving two thyristors, the authors show how the method is used. The example of two NOT circuits connected in series is also treated. This latter example is used to show how the right moment for applying the control pulse as well as the zone of insensitivity to noise can be determined. Thus, the method explained in this article can be used to estimate the time characteristics that must be taken into account for designing stable circuitry.

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USSR

UDC 621.438-226:536.24

YEFIMCHUK, L. A., ZUBAREV, A. P., BLYUMIN, Ya. I.

"Experimental Study of Film Protection of Output Edges of Nozzle Apparatus Blades"

Teplofiz. i Teplotekhnika, Resp. Mezhved. sb. [Heat Physics and Thermal Engineering, Republic Interdepartmental Collection], No 20, 1971, pp 116-120, (Translated from Referativnyy Zhurnal Aviatsiyonnye i Raketnye Dvigateli, No 12, 1971, Abstract No 12.34.32, from the Resume).

Translation: Materials are presented from an experimental study of the effectiveness of the film protection of the output edges of the blades in a gas turbine engine nozzle apparatus, as well as comparative study of various versions of air flow over the protected surface.

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BLYUMKIN, VIKTOR

Cybernetics

3. Medicine and Public Health

19. USSR CYBERNETICS

BLYUMKIN, Viktor

SOVIET BLOC SCIENCE DIGEST 31 Mar 71

"Cybernetics in Soviet Medical Science"

Budapest, Muszaki Elet, 19 Feb 71, p 19

[Summary] About 100 scientific work groups are involved with medical cybernetics at the present time in the Soviet Union. Nearly all are concentrating on evolving methods of machine diagnosis. According to V. M. Amosov, workers at the section of biocybernetics of the Cybernetics Institute of the Ukrainian Academy of Sciences feel that diagnosis is too limited a field for universal electronic computers: The machine is capable of organizing information processing in all branches of therapy. The cybernetics of Kiev wish to solve the problem through the combined use and association of machines operating in various hierarchical structures. They have named such an association ASOMD, automated system for processing medical data. In addition to computers, the system includes communication channels, the implements for collection of primary information, and all other technical equipment.

The ASOMD system can be considered a multi-level man-machine system. Machinery and equipment of the lower level meets the needs of hospitals, clinics, and

USSR

UDC 576.858.083.35:576.353

BLYUMKIN, V. N., and MONASTYREVA, L. A., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Methodology for the Study of Pathological Mitoses in Cell Cultures Infected With Viruses"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 475-478

Abstract: Investigations of mitotic disorders caused by various viruses should be performed on tissue cultures with a minimum percentage of spontaneously developing abnormal mitoses, such as cultures of the RES line (1-9%), VERO line (0-6%), and diploid human cells (2-10%). To ensure thoroughness, the investigation may proceed according to the following classification: A. Pathologic Prophase: 1. premature separation of chromatin; 2. disorganization of spireme; and 3. pulverization of chromosomes. B. Pathologic Metaphase: 1. remaining of single chromosomes or chromosome fragments in metaphase; 2. formation of three groups (multigroup metaphase); 3. colchicine-like (C-) metaphase with disorderly arrangement of excessively short and thick chromosomes; 4. C-metaphase with several chromosome groups; 5. C-metaphase with chromosome adhesion; 6. pulverization of chromosomes; 7. dispersion of unchanged chromosomes; 8. multiband metaphase; 9. open metaphase; 10. monocentric metaphase; and 11. combined

USSR

BLYUMKIN, V. N., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 475-478

disorders. C. Pathologic Anaphase: 1. remaining of viryle chromosomes in anaphase; 2. or of chromosome fragments; 3. chromosome bridges; 4. chromatin bridges; 5. irregular separation of chromosomes; 6. multiband anaphase; and 7. combined disorders. D. Pathologic Telophase: 1. irregular telophase; 2. presence of bridges; 3. multiband telophase; 4. formation of micronuclei; 5. nuclear pyknosis; and 6. combined disorders. A multiband phase in which chromosomes from a triangle, cross, or various stars but are located on one plane (equal distance from polar body) should be distinguished from a multi-group phase in which separate groups of chromosomes are located on different planes (unequal distance from polar body).

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B

Acc. Nr.: AP0031143 Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 85-88

MITOTIC CHANGES OF RES CULTURES (CLONE I) INFECTED THE SENDAI VIRUS

V. N. Blyumkin, L. A. Monastyreva, A. G. Bukrinskaya

D. I. Ivanovsky Institute of Virusology, Academy of Medical Sciences of the U.S.S.R. Moscow

RES cultures (clone i) were infected by Sendai virus, strain No. 960. In this cellular system the virus multiplied with development of cytopathic changes: symplastoformation and destruction of a cellular layer. At early stages of infection a considerable number of cells appeared containing micronuclei. Increase of mitotic activity after infection is replaced by its depression as infection develops. Increase of pathological mitoses in infected cultures is possibly one of early manifestations of a cytopathic action of Sendai virus.

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USSR UDC 616-018.15-092.9-02:576.858.75 (Sendai)

BLYUMKIN, V. N., MONASTYREVA, L. A., and BUKRINSKAYA, A. G., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Mitotic Changes in RES Cultures (CLone I) Infected with Sendai Virus"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1970, pp 85-88

Abstract: RES cultures (clone I) infected with Sendai virus (strain 960) exhibited peculiar quantitative and qualitative mitotic changes. Within two hours of infection, mitotic activity increased simultaneously with intranuclear synthesis of virus-specific RNA. A wave of pathological mitoses appeared after 4-6 hours. The chromosomes, spindles, and centrioles were severely damaged and many of the cells contained micronuclei. These pathological mitoses are interpreted as an early manifestation of the cytopathic effect of Sendai virus on the cellular system under study.

1/1

USSR

UDC 632.95

KHUZOVA, S. I., SVISTUNOVA, N. S., GUS'KOVA, L. A., FADEYEV, YU. N., SAVENKOV, N. F., KHOKHLOV, P. S., and BLYUZHYUK, N. K.

A Nematocide

USSR Author's Certificate No 296546, filed 17 Nov 69, published 27 Sept 71 (from Referativnyy Zhurnal -- Khimiya, No 10(II), 1972, Abstract No 10N528 by T. A. Belyayeva)

Translation: The nematocidal activity is determined for substances of the general formula $R(OCCH_2CHCl_2)_n$ (I) (R= phenyl or arylene n=1-2), which are obtained by the reaction of halides of aromatic acids with vinyl chloride in the presence of $AlCl_3$. I is used in concentration 0.1, 0.01 and 0.001%.

Some 30-50 mg I is dissolved in a 2-5-fold volume of acetone and mixed with 30-50 mg CP-7. The solution obtained is mixed with water. I ($R=C_6H_4$, n=2) (Ia) and I (R= p-$C_6H_4NO_2$, n=1) (Ib) causes 100% distruction of gallic nematode. I (R and n given): p-BrC_6H_4, 1 (Ic); m-C_6H_4-NO_2, 1; m-C_6H_4Cl, 1, Ia, b cause 100% destruction of Aphelenchoides besseyi, Aphelenchus avenae, and Ia and Ic (concentration 0.1 and 0.01%) cause a 100% destruction of Ditylenchus allii.

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USSR

UDC: 624.07.04:534.1

BOBAKOV, L. N., Moscow

"Wave Effects in Buildings due to Seismic Actions"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 3, 1971, pp 40-43.

Abstract: It is assumed that the building can be considered as a continuous structure, the mass and stiffness distribution of which are established experimentally or by calculation. It is also assumed that the displacements are equal at every point of the foundation, which is true, provided that the horizontal dimensions of the building are less than the significant seismic wave length.

USSR

BOBAKOV, L.N., Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 3, 1971, pp 40-43

The seismic shock is approximated by half a sine wave.

An equation of displacement as a function of time and distance from the foundation is given. It includes several terms representing the reflected waves.

Graphs of wave dispersion for different values of reflection coefficient are also given.

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USSR

UDC 621.793

YAGUBETS, A. N., TIMOFEYEVA, N. I., BUNTUSHKIN, V. P., LYUKEVICH, V. I., BOBANOVA, ZH. I., and BUZINOVA, V. P., Moscow, Kishinev

"Obtaining Electrochemical Composite Materials Based on Nickel with Disperse Metal Oxide Particles"

Kishinev, Elektronnaya obrabotka materialov, No 1 (43), pp 62-67

Abstract: A study was made of methods of obtaining composite materials based on nickel with disperse inclusions of refractory oxides -- lanthanum chromite, praseodymium zirconate, and hafnium dioxide. The technological process for obtaining combined coatings comprises three steps: electrolytic deposition of plates, assembly of the plates into packets with subsequent diffusion welding (rolling), and degassing annealing. The effect of the electrodeposition conditions on the composition of the materials was investigated. The pH of the electrolyte and position of the cathode relative to the direction of the force of gravity have the most significant effect on the disperse particle contents. The uniformity of distribution of the particles in the coating depends on uniformity of the hydraulic field of the electrolytic cell. The deformations of the matrix in the hot and cold states improve the structure and distribution of the particles in the composition, and high-temperature annealing causes consolidation of the oxide particles of certain metals. Possible causes of a

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USSR

[illegible] A. N., et al., Elektronnaya obrabotka materialov, No 1 (43), pp 62-67

[illegible] in strength of the precipitation-hardened composite materials with [illegible] metal matrix obtained by the electrochemical procedure are discussed. The [illegible]chanism of coprecipitation of disperse inclusions with metal is discussed. [illegible] microstructure of electrolytically deposited nickel with 1.5 percent hafnium dioxide and lanthanum chromite is illustrated before and after heat treatment.

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USSR

YAGUBETS, A. N., KARYAKIN, V. V., KOVALEV, V. V., BUZINOVA, V. P., and BOBANOVA, ZH. I., Kishinev

"Electrodeposition of Nickel and Iron Coatings Alloyed with Boron"

Kishinev, Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

Abstract: A study was carried out to explore the possibility of preparing boron-containing alloys by an electrolytic method. The nickel electrolyte used had a composition (in g/l) of nickel sulfate (80), nickel nitrate (15), ammonium chloride (30), potassium bisulfite (3), sodium citrate (60), triethanolamine (35), trilon B (35), mercaptophthalic anhydride (0.4), and sodium borohydride (0.4). The acidity of the nickel electrolyte varied from a pH of 10.5 to 14, the temperature from 20 to 70°C, the cathodic current density from 3 to 10 amp/decimeters^2. The composition of the iron electrolyte used was (g/l) ferric sulfate (80), Trilon B (132), triethanolamine (154), sodium borohydride (0.5). The electrolyte temperature was 80°C, the pH 11-12, the cathodic current density varied between 5-15 amps/decimeters^2. The boron content in the powder, microstructure, microhardness, and phase composition of the powder in relation to variation of electrolysis conditions were investigated.
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USSR

YAGUBETS, A. N., et al., Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

The addition of stabilizers displaced the polarizarization curve of nickel, the area and degree of displacement depending on the stabilizer. The iron electrolyte was not affected by the addition of sodium borohydride. The boron uptake by the nickel and iron powders was found to be dependent on the electrolysis conditions and in the nickel amounted to 1-3% by wt. and in the iron up to 7% by wt. Microhardness was also dependent on the electrolytic conditions.

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USSR

UDC 539.3

BOBROV, E. SH., IVANOVSKIY, I. A.

"On One Formulation of Physical Relationships in the Theory of the Bending of Plates of E. Reissner"

Sb. tr. Mosk. inzh.-stroit. in-t (Collection of Works of Moscow Structural Engineering Institute), 1970, No. 84, pp 131-134 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V177)

Translation: The possibility of reducing the problem on the bending of plates within the framework of the theory of E. Reissner (see Reissner, E., J. Appl. Mech., 1945, Vol. 12, A69-A77) to a boundary value problem for two equations of the fourth and second order for an arbitrary transverse load q is realized. The following expressions for transverse forces were obtained in terms of the bending of the middle surface w and the stress function ψ (D is the cylindrical rigidity, ν is the Poisson coefficient, h is the thickness, x, y are the orthogonal coordinates in the middle plane, and Δ is the Laplace operator)

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USSR

BOBROV, E. SH., IVANOVSKIY, I. A., Sb. tr. Mosk. inzh.-stroit. in-t, 1970, No. 84, pp 131-134

$$Q_x = -D\frac{\partial}{\partial x}\Delta w - \frac{h^2}{10}\frac{2-\nu}{1-\nu}\frac{\partial q}{\partial x} + \frac{\partial \psi}{\partial y}$$

$$Q_y = -D\frac{\partial}{\partial y}\Delta w - \frac{h^2}{10}\frac{2-\nu}{1-\nu}\frac{\partial q}{\partial y} - \frac{\partial \psi}{\partial x}$$

The appropriate expressions for the moments in terms of w and ψ are written with the aid of these relationships. V. T. Grinchenko.

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AA0043312

UR 0482

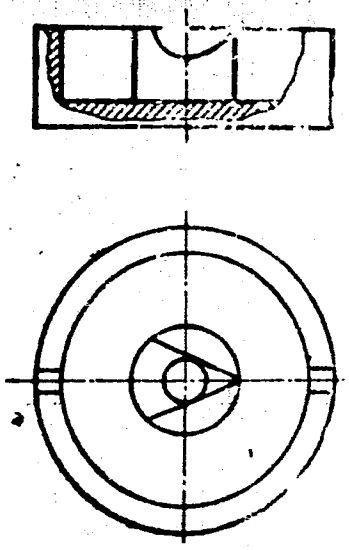
Soviet Inventions Illustrated, Section II Electrical, Derwent,

243056 MAGNETIC CORE FOR A VARIABLE INDUCTANCE COIL is simplified and is easier to manufacure. The core is composed of two identical cups. The centre column of the core is chamfered in two places at an arbitrary angle and the chords so formed on the top surface of the core intersect each other on the circumference. The airgap of the core can be adjusted by turning one half with respect to the other which results in an adjustable inductance.

17.12.65 as 1043260/24-7. G.F.BOBROV. (30.9.69) Bul 16/ 5.5.69. Class $21d^2$, $21a^4$. Int.Cl. H 01f.

19761519

AA0043312



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19761520

USSR

UDC: 535.8:535.214.4

BOBROV, I. N., PISKOV, P. T.

"Optimum Synthesis of a Radiometer With Single-Tank Parametric Amplifier"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 986-989

Abstract: The authors determine the conditions which must be satisfied to maximize input sensitivity in a radiometer with a single-tank parametric amplifier. Functional relationships are found for optimum values of the gain of the parametric amplifier, its passband, and the passband of the following (second) amplifier as functions of the "cold" passband of the parametric amplifier and the spectral density of the set noises of the parametric and second amplifiers.

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DYNAMIC RANGE OF NONREGENERATIVE PARAMETRIC AMPLIFIER CONVERTERS -U-

AUTHOR-(03)-BOBROV, I.N., VOLKOV, V.M., SINEOK, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 1, 1970, PP 97-98

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PARAMETRIC AMPLIFIER, DYNAMIC SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1474 STEP NO--UR/0108/70/000/001/0097/0098

CIRC ACCESSION NO--AP0123377

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123377

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DYNAMIC PROPERTIES OF A NONREGENERATIVE AMPLIFIER CONVERTER ARE ANALYZED. FACTORS DETERMINING ITS DYNAMIC RANGE ARE ESTABLISHED.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--THICKNESS OF THE RINGS OF SATURN -U-

AUTHOR--BOBROV, M.S.

B

COUNTRY OF INFO--USSR

SOURCE--PRIRODA, NO. 3, 1970, P. 66-69

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--SATURN PLANET, PLANETARY ATMOSPHERE, ASTRONOMIC OBSERVATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0872 STEP NO--UR/0026/70/000/003/0066/0069

CIRC ACCESSION NO--AP0110593

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0110593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF OBSERVATIONS OF SATURN IN EUROPE, ASIS, AMERICA AND AUSTRALIA CONDUCTED IN 1966 BY ASTRONOMERS OF VARIOUS COUNTRIES DURING THE PASSAGE OF THE EARTH THROUGH THE PLANE OF THE RINGS. SPECIAL ATTENTION IS GIVEN TO THE MEASUREMENT OF THE THICKNESS OF THE RINGS WHICH IS ESTIMATED TO BE ABOUT 3.5 KM.

FACILITY: AKADEMIIA NAUK SSSR, ASTRONOMICHESKII SOVET, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THICKNESS OF THE RINGS OF SATURN -U-

AUTHOR--BOBROV, M.S.

B

COUNTRY OF INFO--USSR

SOURCE--PRIRODA, NO. 3, 1970, P. 66-69

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--SATURN PLANET, PLANETARY ATMOSPHERE, ASTRONOMIC OBSERVATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0872 STEP NO--UR/0026/70/000/003/0066/0069

CIRC ACCESSION NO--AP0110593

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF OBSERVATIONS OF SATURN IN EUROPE, ASIS, AMERICA AND AUSTRALIA CONDUCTED IN 1966 BY ASTRONOMERS OF VARIOUS COUNTRIES DURING THE PASSAGE OF THE EARTH THROUGH THE PLANE OF THE RINGS. SPECIAL ATTENTION IS GIVEN TO THE MEASUREMENT OF THE THICKNESS OF THE RINGS WHICH IS ESTIMATED TO BE ABOUT 3.5 KM.

FACILITY: AKADEMIIA NAUK SSSR, ASTRONOMICHESKII SOVET, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 911.3.613.11 (98)

BOBROV, N. I., and TIKHOMIROV, V. P.

"Some Functional Shifts During Acclimitization to Far North Conditions"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 35-37 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.44)

Translation: It was found that people living in the Far North for 5-6 months, in comparison with new arrivals, had increased blood content of reduced fractions of Shaw substance complex, which indicates shifts in the functional state and increase in tonus in the sympathetic-adrenal system in response to the unfavorable conditions of the Far North. The blood of people living in the Far North for more than two years shows an increase in the content of reverse-oxidation Shaw forms. The dyspnea occurring under Northern conditions is more evident during the first stages of acclimatization. One of the probable causes of dyspnea is the significant decrease of oxygen in arterial blood as a result of decrease in the partial oxygen pressure in inhaled air because of low atmospheric pressure.

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USSR

UDC 621.039.5/6

LEYUNSKIY, A. I., YUROVA, L. N., BOBROV, S. B., MURCGOV, V. M., TOCHENYY, L. V., TROYANOV, M. F., and SHMELEV, A. N.

"Improving the Physical Characteristics of Fast Plutonium Reactors by Using U^{233} and Thorium"

Moscow, Atomnaya Energiya, Vol 30, No 6, Jun 71, pp 491-498

Abstract: Investigations carried out on the physics of fast reactors, both in the USSR and abroad, have shown the requirements for a high breeding time and safety guarantee may be contradictory. This article seeks to find ways for resolving these contradictions.

The authors first discuss the basic physical characteristics of fast reactors using a mixed fuel by equalizing the yield of heat release. Computations showed that in a fast reactor using a mixed fuel composed of U^{233} and plutonium the radial coefficient of inbalance can be reduced, the breeding ratio increases significantly, and the doubling time is improved. Table 1 compares the characteristic of different types of high-power fast reactors.

The authors then discuss changing the profile of the heat release

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field during the operating period of a high-power fast reactor using a mixed fuel and give Figure 1 as illustration. They then discuss change in the reactance during the same period for such a reactor, using Figures 2, 3, and 4 for graphic visualization. Finally, they discuss the Doppler and sodium coefficients of reactance in such a reactor and use Figure 5 and Table 2 to clarify the discussions. Based on their research the authors claim that the possibility does exist for increasing the power strength and breeding time of the fuel with the simultaneous assurance of safety for a fast reactor using a sodium heat carrier; this is possible by using U^{233} and thorium in conjunction with U^{238} and plutonium in high-power fast reactors.

The article contains 5 figures, 2 tables, and a bibliography of 15 titles.

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