

USSR

UDC 517.938.4

MALYSHEV, YU. V., Kazan' Chemical Engineering Institute imeni S. M. Kirov

"Systems With a Finite Number of Singular Points"

Minsk, Differentsial'nyye Uravneniya, Vol. 6, No. 10, Oct 70, pp 1882-1885

Abstract: The Lyapunov generalized functions are applied to study systems with a finite number of isolated singularities. It is shown that under certain sufficiency conditions expressed in terms of special Lyapunov functions the systems can be divided into parabolic, elliptical, hyperbolic, and elliptico-hyperbolic. A system is called parabolic, for example, if it has an infinite set of parabolic trajectories. The following examples are given to illustrate the results: a system $x' = x^2 - y^2 - 1$, $y' = 2xy$ with singularities $A_1 (-1, 0)$, $A_2 (1, 0)$ has for the Lyapunov generalized function $V(x) = \sqrt{(x+1)^2 + y^2} + \sqrt{(x-1)^2 + y^2} - 2$ the following branches of the manifold H : $y = 0$, $x = 0$. Then $y = 0$ is the integral line and $V_2 < 0$ along $x = 0$; i.e., the system is elliptical. Similarly, the system $x' = x^2 - y^2 - 1$, $y' = -2xy$ is hyperbolic.

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Water Treatment

USSR

UDC 542.48.003.1

DYKHNO, A. Yu., KEGAMYAN, Yu. Sh., MALYSHEVA, A. E., MITLITSKIY, G. A.,
and SENDEROVICH, A. E.

"Technological and Economical Comparison of Two Multipurpose TETs [Heat and Electric Power Stations] for Distillation of Sea Water"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 1, 1972, pp 2-5

Abstract: Results of performance, maintenance cost, reliability, and the cost of distilled water for two types of distillation plants (A and B) are analyzed. Plant A is equipped with separate zones for water boiling and uses seed crystals for reducing the formation of low-temperature boiler scale, consisting mainly of calcium carbonate and magnesium hydroxide.

Plant B operates by the open cycle principle with the feeding of vapor generators with demineralized sea water. Both plants produce electrical energy, steam, and distilled water. The cost of distilled water is 59 and 86 kopeks/ton water for plants A and B, respectively, with an electrical energy consumption of 66 kopeks/kwatt/hour.

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UDC 616.988.75+616.2-036.11-022.6]-097.3

SHADRIN, A. S., YAKUBENKO, A. A., MALYSHEVA, A. M., NAYKHIN, A. N., GROMOVA, M. I., RUMEL', N. B., and SMORODINTSEV, A. A., All-Union Scientific Research Institute of Influenza, Leningrad

"The Effect of Serum Antiviral Inhibitors on Resistance to Influenza and Acute Respiratory Diseases"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 582-586

Abstract: A study conducted on about 1000 men, women, and children living in Leningrad and Murmansk and on 129 volunteers revealed that the presence of beta-inhibitors in the blood significantly reduces the proportion of clinically severe forms of influenza and parainfluenza (a fall by a factor of 2.5), decreases the frequency of severe forms of experimental influenza (down by a factor of 2), and slows the development of immune response to vaccination with highly attenuated influenza strains. Beta-inhibitors do not exert an anti-infectious effect, that is, they do not prevent contraction of the diseases. Their protective value stems from their antitoxic effect, that is, reduction of the severity of influenza and parainfluenza without hindering the body's specific reaction to the infection.

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UDC 613.646:613.13

~~MALYSHEVA, A. Ye.~~, Professor, REPIN, G. N., and NIKOLAYEVA, Ye. N., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"The Significance of the Microclimate of Industrial Premises for Human Seasonal Adaptation"

Moscow, Gigiyena i Sanitariya, No 11, 1970, pp 24-29

Abstract: Male workers in three occupational groups, working in different industrial microclimatic conditions, have been investigated in recent years. The first group consisted of construction workers who worked outside the year round (Moscow); the second group consisted of workers in machine assembly shops working in ventilated quarters with normal microclimate (city of Elektrostal'); and the third group comprised "hot" shop workers, who were subjected to infrared radiation, high air temperatures -- especially in the summer, and also to large temperature drops (Lipetsk).

More than 1,000 workers in these occupational groups underwent physiological and immunobiological tests. A total of 5,000 workers in the same groups
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MALYSHEVA, A. Ye., et al, Gigiyena i Sanitariya, No 1.1, 1970, pp 24-29

were subjected to a detailed analysis of their morbidity with temporary work disability. Differences in the skin temperature response to local cooling must be evaluated as an indicator of higher functional lability of skin vessels to cooling in construction workers.

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1/2 027 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--IMMUNOMICROBIOLOGICAL INDICES IN PATIENTS WITH RHEUMATISM IN
SEASONAL BICILLIN PROPHYLAXIS -U-
AUTHOR--LABINSKAYA, A.S., PONOMAREVA, YE.P., MIKHAYLOVA, I.N., MALYSHEVA,
E.A.
COUNTRY OF INFO--USSR M
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 50-52
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RHEUMATIC DISEASE, STREPTOCOCCUS, ANTIBIOTIC, PROPHYLAXIS,
ANTIBODY, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/1852 STEP NO--UR/0504/70/042/002/0050/0052
CIRC ACCESSION NO--AP0101897
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101897

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE MICROFLORA OF THE PHARYNX TO THE CONTENT OF STREPTOCOCCUS OF GROUP A IN 65 PATIENTS WITH RHEUMATISM BEFORE THE BEGINNING AND AFTER THE TERMINATION OF EACH COURSE OF SEASONAL BICILLIN PROPHYLAXIS AND IN 45 THE BLOOD SERUM FOR DETERMINATION OF THE TITRES OF ANTISTREPTOLYSIN-O, ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE. IT IS SHOWN THAT BY THE END OF EACH COURSE OF PROPHYLAXIS A DROP IN THE TITRES OF STREPTOCOCCAL ANTIBODIES AND IN PARALLEL, A REDUCTION IN THE PERCENTAGE IN THE STREPTOCOCCAL CARRIER STATE WERE SEEN. BY THE END OF THE V COURSE IN THE MAJORITY OF PATIENTS THE INDICES OF ANTISTREPTOHYALURONIDASE AND ANTISTREPTOKINASE BECAME STABILIZED DROPPING TO THE NORMAL LEVELS. A COURSE BICILLIN TREATMENT DOES NOT ENSURE PATIENTS COMPLETELY FROM THE RISK OF SUPERINFECTION MOSTLY IN THE FORM OF STREPTOCOCCAL CARRIER STATE. THE LATTER DEVELOPS IN THE PHARYNX USUALLY BETWEEN TREATMENT AND IS ACCOMPANIED AS A RULE BY AN INCREASE OF THE CONTENT OF STREPTOCOCCAL ANTIBODIES IN THE BLOOD SERUM. THUS THERE IS A CORRELATION BETWEEN THE MICROBIOLOGICAL AND IMMUNOLOGICAL INDICES.

UNCLASSIFIED

USSR

UDC 615.33.014.45.07

MALYSHEVA, E. S., GANEMAN, M. G., KHIRICH, I. V., Moscow Factory of Medical Preparations No 2

"A More Rapid Method of Controlling Sterility of Seed Material in the Production of Antibiotics"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, May 1971, pp 41-43

Abstract: Before the culture medium is inoculated, it is subjected to a period of aeration and agitation at 37°C to stimulate the growth of any contaminating aerobic microorganisms to the point at which they can be detected by existing techniques. This process is shown to significantly reduce the time necessary to detect such contamination and to be more efficient than existing techniques. The authors discount the possibility of significant contamination arising from anaerobic microorganisms in view of the fact that antibiotics are produced under aerobic conditions which do not favor the growth of anaerobic organisms.

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USSR

UDC 669.24:539.261:539.292

ARTISISHEVAKAYA, L. F., MALYSHEVA, I. B., and SELISKIY, YA. P., Institute of Precision Alloys, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Investigation of Ordering Kinetics in Ni-Mo Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 377-382

Abstract: The structural features of the ordering process were studied on two Ni-Mo alloys containing 15 and 20.2 at% Mo by electron microscope and x-ray diffraction methods. Ordering in Ni-Mo alloys takes place slowly (up to 100 hours) at annealing temperatures of 700 and 800°C in an alloy of stoichiometric composition, and both ordered and unordered phases can be observed. The change in lattice structure during ordering (formation of the tetragonal phase Ni_4Mo) leads to the development of a complex domain structure including, apart from anti-phase domains, perpendicular twins. The size and shape of the perpendicular twins and domains depend on the annealing temperature. After annealing at 700°C, fine perpendicular twins are formed with a dimension of approximately 50 Å, and in the grain boundaries--regions of the 1/2

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ARTSISHEVAKAYA, L. F., et al., Fizika Metallov i Metallovedeniye, Vol 33,
No 2, Feb 72, pp 377-382

ordered Ni_4Mo phase, twins without the twinning orientation can be observed.

At 800°C the domain structure represents coarse perpendicular twins in the form of plates inside of which the anti-phase domains are grouped. Four figures, 5 bibliographic references.

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USSR

UDC: 8.74

MALYSHEVA, I. I., SYPCHUK, P. P., YURIN, O. N.

"A General Algorithm for Solving the Problem of Laying out Printed Circuit Connections"

Moscow, Kibernetich. sistemy avtomatiz. proyektir.---sbornik (Cybernetic Automated Design Systems--collection of works), 1973, pp 74-80 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V596 by O. Belkin)

Translation: In known papers dealing with development of algorithms for laying out printed circuit connections, primary attention is given to overcoming design and technological limitations which differ for each type of board manufacturing technique. Development of a universal method of solving the layout problem which is suitable for any practically realizable technique is possible only on the basis of creating a generalized circuit board model. The paper gives a formalized description of a generalized printed circuit board. A general algorithm for laying out printed circuit connections is proposed. Based on the proposed algorithm, a program was developed for automatic layout of printed circuit connections with regard to hardware limitations. The program is written for the digital computer System 4/50 and contains 15,000 commands.

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bronchial anastomosis was noted during this period. Spirometry, bronchoscopy, and analysis of blood gases showed that the functional indices of the replanted lung were close to normal within 3 months after surgery. However, the mechanical properties of the lung were not restored even at the end of the observation period when an increase in alveolar pressure, bronchial resistance, and elasticity and a decrease in distensibility were still noted. These abnormalities are probably attributable to histological changes in the tissues, blood vessels, and bronchial walls, as well as to the formation of adhesions in the pleural cavity surrounding the replanted lung.

USSR

UDC 616.24-089.843-092.9-07:616.24-009.4-072.7

KOLESNIKOV, V. D., KIPRENSKIY, Yu. V., RABINOVICH, Yu. Ya., and MALYSHEVA, L. G.,
Department of Clinical Physiology, and Department of Thoracic Surgery, Institute
of Clinical and Experimental Surgery, Ministry of Health USSR, Moscow

"Study of the Ventilation and Mechanics of Respiration of the Replanted Lung
Under Experimental Conditions"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 4, Jul/Aug 70,
pp 67-71

Abstract: Clinical and x-ray studies were conducted of lung replantation in dogs
for a period of one year after the operation. No significant narrowing of the

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UDC 622.7:621.039.8

KLASSEN, V. I., MALYSHEVA, N. G., and STARCHIK, L. P.

"Effect of Radioactive Radiation on the Process of Slurry Precipitation"

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 82-84

Abstract: In a study of the effect of radioactive radiation on the process of slurry precipitation, a special device was used for irradiating the suspension by means of an $Sr^{90} + Y^{90}$ source. The optimum irradiation time was 1-1.5 hrs. A study was made of the rate of precipitation of galenite, pyrite, quartz, calcite, albite, fluorite, and bauxite. The size of the mineral particles was 10 microns. The rate of precipitation of the suspension was determined photometrically. It was established that the rate of slurry precipitation under the effect of radioactive irradiation was increased for calcite 2.5 times, albite 1.5 times, etc. The mechanism of the effect of irradiation on slurry precipitation is explained.

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1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF IRRADIATION ON THE PRECIPITATION OF SLURRIES -U-

AUTHOR--(03)-KLASSEN, V.I., MALYSHEVA, N.G., STARCHICK, L.P.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(11), 82-4

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SLIME, SEDIMENTATION, MINERAL, BAUXITE, FLUORITE, IRRADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1986/0876

STEP NO--UR/0136/70/043/011/0082/0084

CIRC ACCESSION NO--AP0102837

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102837

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEDIMENTATION RATES OF GALENA, PYRITE, QUARTZ, CALCITE, ABLITE, FLUORITE, AND BAUXITE WERE STUDIED. THE SIZE OF THE MINERAL PARTICLES WAS SMALLER THAN OR EQUAL TO 10 MU. THE CHANGE IN THE SEDIMENTATION RATE WAS DETD. PHOTOMETRICALLY. THE SUSPENSION WAS IRRADIATED BY USING A SPECIALLY DEvised APP. AS SOURCES, PRIME90 SR PLUS PRIME90 Y AND PRIME144 CE PLUS PRIME144 PR WERE USED. THE TIME OF IRRADN. OF THE SUSPENSION (I.E., THE DOSAGE) VARIED FROM 30 MIN TO 6 HR. THE OPTIMUM IRRADN. TIME WAS 1-1.5 HR. ON IRRADN., THE RATE OF COAGULATION OF THE SLURRIES INCREASES BY 2.5 TIMES FOR CALCITE, AND BY 1.5 TIMES FOR ALBITE. IN THE PRESENCE OF COAGULANTS, SUCH AS H SUB2 SO SUB4 AND POLYACRYLAMIDE, THE COAGULATING ACTION OF THE IRRADN. IS PRESERVED AND EVEN INCREASES. THE MECHANISM OF THE EFFECT OF IRRADN. ON THE SEDIMENTATION OF SLURRY PARTICLES CAN POSSIBLY BE EXPLAINED BY THE FACT THAT THE WATER MOLS., UNDER THE INFLUENCE OF IONIZING RADIATION, ECOMP. INTO FREE H, OH, AND HO SUB2 RADICALS. BY REACTING, THEY CAN FORM H SUB2, O SUB2, AND H SUB2 O SUB2, AND CAN EVEN RECOMBINE TO AGAIN FORM H SUB2 O; IN ALL CASES, THE PH OF THE WATER IS ALTERED. AN ESP. LARGE EFFECT ON THE COAGULATION PROCESS OF THE SLURRIES IS EXERTED BY THE H AND OH RADICALS PRESENT IN THE SUSPENSION AS A RESULT OF RADIOLYSIS OF WATER. THE TIME WHICH HAS PASSED AFTER THE IRRADN. OF THE WATER ALSO HAS A SIGNIFICANT EFFECT ON THE SEDIMENTATION OF THE SUSPENSION.

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tives having $\phi_{\text{des}} > +0.5\text{V}$ were designated as Type I and those with $\phi_{\text{des}} = 0.34-0.44\text{V}$, as Type II. For both types there was a relation between the coeff. of corrosion inhibition (γ) and the value $\Delta\phi_m$. Between $\Delta\phi_m < 0.2\text{V}$ and $\Delta\phi_m > 0.2\text{V}$, the value of γ changed sharply. A parallel was observed between adsorption on Hg and protective effect. The value of γ for Type I cationic surfactant was greater than that for Type II. Surface activity

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for the adsorption of org. cations. Type II inhibitors do not contain halogen ions and thus are only adsorbed by the former mechanism. Addn. of KBr increases γ for a Type II inhibitor, changing it to a Type I. J. E. Scarlett

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Acc. Nr.

AP0049346

Abstracting Service:

CHEMICAL ABST. 5/10

Ref. Code

4R0365

106494r Technical inhibitors of the acid corrosion of steel
studied from electrochemical aspects. Afanas'ev A. S. Reil.

AP0049346

is important but is not the only factor in protective activity so
that γ does not depend directly on surface tension. Type I

Analysis and Testing

USSR

UDC: 669.017.11

CHATTERDZHI, A. K., MALYSHEVA, T. Ya., and ZHMOYDIN, G. I., Moscow

"Phase Composition of Slags of the Calcium Oxide-Aluminum Oxide-Calcium Fluoride System"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, Nov-Dec 70, pp 58-64

Abstract: The information available on the phase composition of $\text{CaO-Al}_2\text{O}_3\text{-CaF}_2$ slags is inadequate, fragmentary, and contradictory. Optical and x-ray diffraction analyses of heat-treated representative samples indicate that the $\text{CaO-Al}_2\text{O}_3\text{-CaF}_2$ ternary system is nonequilibrium in open air and that interaction occur. On the basis of this examination it also became possible to explain certain features of the fusibility isotherms of the ternary system. In a ternary system the primary crystallization fields all have binary calcium aluminates. With the formation of the ternary compound $3\text{CaO} \cdot 3\text{Al}_2\text{O}_3 \cdot \text{CaF}_2$ the fluoride derivative of the unstable phase C1247 becomes most stable while the stable monoaluminate CA is limited to a narrow range of compositions up to 14% CaF_2 . The irregular occurrence of the ternary compound $\text{C}_{3/2}\text{A}_2\text{CaF}_2$ in

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CHATTERDZHI, A. K., et al, Izvestiya Akademii Nauk SSSR, Metally, No 6, Nov-Dec 70, pp 58-64

its crystallization fields and the systematic penetration of Ca_2 in them confirms the instability of the ternary compound in an open system. The occurrence of CaO in the triangle $C_3A-C_{11}A_7, CaF$ signifies the possibility of decomposition of compound C_3A to form a fluoride phase in free lime.

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRENGTH AND MINERALOGICAL COMPOSITION OF PELLETS FROM
SOKOLOVO-SARBAI BENEFICIATING COMBINE IN RELATION TO FIRING CONDITIONS
AUTHOR--(04)-CHERNYSHEV, A.M., MALYSHEVA, T.YA., MOREYEVA, G.P., ZHURAVLEV,
F.M.
COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(4), 293-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--PELLETIZATION, IRON ORE, SLAG, CERAMIC BINDER, TEMPERATURE
DEPENDENCE, MECHANICAL STRENGTH, CALCIUM OXIDE, MAGNESIUM OXIDE,
ALUMINA, SILICA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3007/1275

STEP NO--UR/0133/70/030/004/0293/0298

CIRC ACCESSION NO--AP0136681

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136681

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF TIME AND TEMP. AT DIFFERENT STAGES OF FIRING FLUXED FE ORE PALLETS WAS INVESTIGATED MINERALOGICALLY AND BY CRUSHING STRENGTH DETN. AT HIGH TEMPS. COMPLEX SILICOFERRITES CONTG. LESS THAN OR EQUAL TO 9PERCENT (CAO PLUS MgO PLUS AL SUB2 O SUB3 PLUS SiO SUB2) HAVING A MAX. CRIT. STRENGTH TEMP. SERVE HERE AS A BOND WHICH HAS A LESSER REDUCIBILITY THAN HEMATITE AND MAGNETITE AND REMAINS SUCH UP TO THE REDN. OF FE TO METAL. A MAX. RANGE OF 650-700DEGREES OF CRIT. STRENGTH WAS RECORDED WITH A STRUCTURE OF INTERMESHED HEMATITE AND FERRITES. ADDN OF DOLOMITE TO THE CHARGE CAN BE RECOMMENDED IN THIS LIGHT.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--NEURONAL ACTIVITY IN THE COLLICULUS INFERIOR OF KITTENS TO SOUND
SIGNALS AT VARIOUS AGES -U-
AUTHOR--(02)--MARUSEVA, A.M., MALYSHEVA, V.I.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 2,
PP 225-234
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--WHITE NOISE, CAT, NEURON, BIOPOTENTIAL, AUDITORY SYSTEM,
MEDICAL EXPERIMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/2022 STEP NO--UR/0385/70/006/002/0225/0234
CIRC ACCESSION NO--AP0105094
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0105094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPULSE ACTIVITY OF SINGLE UNITS OF THE COLLICULUS INFERIOR HAS BEEN EVOKED BY SOUND PULSES (TONES AND WHITE NOISES) OF VARYING INTENSITY AND DURATION. NEURONAL RESPONSES TO SOUND STIMULI WERE OBSERVED FROM THE 9 TO 10TH DAY OF POSTNATAL LIFE. THE SPIKE ACTIVITY OF THE NEURONS AT THIS PERIOD IS CHARACTERIZED BY LONG LATENT PERIOD, HIGH THRESHOLD AND LOW RATE OF DISCHARGE. SOME OF THE NEURONS EXHIBIT NONMONOTONOUS DEPENDENCE OF THE DISCHARGE PATTERN ON SIGNAL INTENSITY. THIS FACT INDICATES THAT INHIBITORY INFLUENCES MAY BE OBSERVED IN THE AUDITORY SYSTEM FROM THE MOMENT OF THE ONSET OF NEURONAL RESPONSES TO SOUND STIMULATION.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MICROBIOLOGICAL PRODUCTION OF CALCIUM GLUCONATE -U-
AUTHOR--SOSHNIKOV, D.YA., PETUNINA, A.G., MALYSHEVA, YE.A.,
COUNTRY OF INFO--USSR
SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 83-5
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CALCIUM COMPOUND, GLUCOSE, FERMENTATION, YEAST, CULTURE MEDIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1936/1705 STEP NO--UR/0411/70/006/001/0013/0035
CIRC ACCESSION NO--AP0103471
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103471

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CA GLUCONATE WAS PRODUCED BY OXIDN. OF GLUCOSE WITH GLUCONOBACTER (ACETOBACTER) SUBOXYDANS. THE MEDIUM WAS SUPPLEMENTED WITH A YEAST EXT. AS A STIMULATOR AND CHALK AS A NEUTRALIZING AGENT FOR THE GLUCONIC ACID FORMED. THE FERMENTATION WAS PERFORMED AT 30-32DEGREES FOR 42-46 HR WITH CONTINUOUS AERATION. DURING THIS PERIOD OVER 95PERCENT OF THE GLUCOSE WAS OXIDIZED. THE CONTENT OF CA GLUCONATE IN THE CULTURE LIQ. AMOUNTED TO 71PERCENT OF THE GLUCOSE CONSUMED.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--BENZENDIO QUINDIO TAUTOMERISM OF AZOMETHINES AND THEIR STRUCTURAL
ANALOGS. V. ACYLOTROPIC TAUTOMERISM OF S, ACCTYL, P, THIOBENZALDIMINES -U-
AUTHOR--(04)--ZHDANOV, YU.A., MINKIN, V.I., OLEKHOVICH, L.P., MALYSHEVA,
YE.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. BRG. KHIM. 1970, 6(3) 554-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BENZENE DERIVATIVE, TAUTOMERISM, ORGANIC SULFUR COMPOUND,
IMINE, AROMATIC AMINE, UV SPECTRUM, BOND ENERGY, MOLECULAR ORBITAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1533 STEP NO--UR/0366/TO/006/003/0554/0559
CINC ACCESSION NO--AP0112527
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--0200T70

CIRC ACCESSION NO--AP0112527

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION OF 4-ACSC SUB6 H SUB4 CHO (I) WITH AROMATIC AMINES IN NONPOLAR SOLVENTS GAVE 4-ACSC SUB6 H SUB4 CH:NR (II) (R EQUALS H, 4-MEO, 4-NME SUB2, OR 4-NO SUB2). THE REACTION OF I WITH MORE BASIC ALKYL AMINES 4-HSC SUB6 H SUB4 CHO PLUS ACNHR. IN POLAR SOLVENTS (HCONME SUB2, MEON) I REACTS WITH AROMATIC AMINES TO GIVE ACNHR, ALSO. THIS IS DUE TO THE SHIFT OF THE BENZOID THIOQUINOID I EQUIL. TOWARDS THE THIOQUINOID FORM, WHICH IS HYDROLYZED (WITH H SUB2 O PRODUCED DURING THE REACTION) TO GIVE 4-HSC SUB6 H SUB4 CHO AND ACNHR. THIS WAS CONFIRMED BY STUDYING UV SPECTRA OF II (R EQUALS 4-OME) IN BENZENE-OPINME SUB2) SUB3 MIXTS. THE EQUIL. OF NONACETYLATED II ANALOGS 4-HSC SUB6 H SUB4 CH:NR (III) IS SHIFTED MORE TOWARDS THE THIOQUINOID FORM IN POLAR SOLVENTS THAN II EQUIL. THE DIFFERENCE IS DUE TO WEAKENED C-N PI-BONDING ENERGY OF THE THIOQUINOID II FORMS COMPARED WITH THESE FORMS OF III. THE LCAD-MO CALCNS. CONFIRMED THIS.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--HETEROCYCLIC ANALOGS OF PLEIADIENE. II. GENERAL EXAMINATION OF
SYSTEMS CONTAINING A PYRROLE TYPE NITROGEN ATOM. PARTICIPATION OF A
AUTHOR--POZHARSKIY, A.F., MALYSHEVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 103-10

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL BONDING, MOLECULAR ORBITAL, ELECTRON STRUCTURE,
QUINONE, PYRROLES, AMINE DERIVATIVE, HETEROCYCLIC BASE COMPOUND,
ELECTRON DENSITY, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1050

STEP NO--UR/0409/70/000/001/0103/0110

CIRC ACCESSION NO--AP0104448

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. PI BOND ORDERS, PI ELECTRON D., ENERGIES OF THE HIGHEST OCCUPIED MO, TOTAL PI ELECTRONIC ENERGIES, AND ENERGIES OF THE 1ST PI-PI TRANSITIONS WERE CALCD. BY HUECKEL MO APPROXNS. (OVERLAP INTEGRALS NEGLECTED) FOR I AND II (X AND Y EQUALS N AND CH). WHEREAS IN MOST COMPS. STUDIED, PARTICIPATION OF A PYRROLE TYPE N ATOM IN AROMATIC SIX MEMBERED RING IS ACHIEVED BY FORMATION OF QUINONE STRUCTURES, DISOBEYANCE OF THE HUECKEL RULE, OR NONPLANARITY OF THE MOL. I FORM THE MOST TYPICAL HETERODROMATIC SYSTEMS CONTG. A PYRROLE TYPE N ATOM. CHEM. BEHAVIOR OF I IS DISCUSSED AND COMPARED TO THAT OF II.

UNCLASSIFIED

USSR

UDC 621.385.711

MALYUGIN, V.I., SOMINSKIY, G.G.

"Investigation Of Ion Bombardment Of Cathodes Of An Amplitron"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 113-117 (from RZh--Elektronika i yeye primeneniya, No 2, February 1971, Abstract No 2A169)

Translation: A method is developed for investigation of ion bombardment of cathodes which can be used for investigations in M-type power devices with a cathode in the interaction space. As a result of experimental investigations of ion bombardment of cathodes in a power pulse amplitron, the connection between the ion current at the amplitron cathode and the intensity of the magnetic field ($1750 \leq H \leq 2200$ e), the anode voltage ($10 \leq V_a \leq 22$ kv) and the pressure of the residual gas ($10^{-8} \leq p \leq 10^{-4}$ mm mercury), it is found that the magnitude of the ion current at the cathode increases approximately by three orders of magnitude with an increase of the pressure from 10^{-8} to 10^{-4} mm of mercury. The results indicate the potentialities of forced tests of the stability of cathodes with respect to ion bombardment with an increase of the pressure of the residual gases to 10^{-4} mm mercury. 5 ill. 5 ref. G.B.

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USSR

MIKHALEVSKIY, V. S., et al, Elektron. tekhnika. Nauchno-tekhn.
sb. Elektron. SVCh, 1970, Issue No 10, p 50

cylindrical wave and the radially diverging electron stream, close to practicable realization, makes it possible to evaluate quantitatively their effect on the amplification factor and the interaction conditions in a traveling-wave tube with a radial stream, and can be used during computation of concrete decelerating systems.

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USSR

UDC 621.762.001:669.295

MAL'TSEV, M. V., KHROMOV, V. G., and MALYSHKINA, Z. N.

"Investigation of the Production and Properties of P/M Electrolytic Titanium"

Tr. Gor'kovsk. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), 1970, 26, No 15, pp 33-40 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G370 by V. Chelnokov)

Translation: The article investigates the properties of 0.5-mm-thick compact titanium strip produced by the method of rolling PTER-3 electrolytic powder. To obtain the strip, the powder must be rolled into breakdown strip ~3 mm thick with a porosity of 10-20%. Four-time rolling of the breakdown with intermediate sintering at 1000° in high vacuum (~5·10⁻⁵ mm Hg) and final annealing at 750-1000° makes possible the production of titanium with $\sigma = 45-50\%$ and $\sigma_B = 32-40$ kg/mm². It is recommended that annealing be performed at 750°, which assures the obtaining of fine-grained structure of alpha-titanium with optimum plastic properties and strength. Four illustrations. One table. Bibliography with six titles.

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038
UNCLASSIFIED
TITLE--ON SPLITTING OF THE SPECIFIC HEAT PEAK AND DISCONTINUITY NEAR THE
CRITICAL POINT -U-
AUTHOR--(021)-BERESTOV, A.T., MALYSHKO, S.P.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2090-2098
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SPECIFIC HEAT, SPECIFIC HEAT RATIO, TEMPERATURE DEPENDENCE,
CRITICAL POINT, CALORIMETER, CALORIMETRY, SPECIFIC DENSITY, RELAXATION
PROCESS, IMPURITY LEVEL, TEMPERATURE GRADIENT, PHASE TRANSITION, SECOND
ORDER PHASE TRANSITION, THERMODYNAMIC EQUILIBRIUM, CRYSTAL LATTICE
CONTROL MARKING--NC RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0529
STEP NO--UK/0056/70/058/006/2090/2098
CIRC ACCESSION NO--AP0121202
UNCLASSIFIED

2/2 038

CIRC ACCESSION NO--AP0121202

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U; G2-0- ABSTRACT. EXPERIMENTS SHOW (PRIME) THAT THE SPECIFIC HEAT C SUBV PRIMES OF A BINARY SYSTEM AS A FUNCTION OF TEMPERATURE DOES NOT LIE ON THE COEXISTENCE CURVE NEAR THE CRITICAL POINT, I. E. IT DOES NOT COINCIDE WITH THE SPECIFIC HEAT DISCONTINUITY. THIS EFFECT IS NOT THE RESULT OF IMPURITIES IN THE SYSTEM BUT RATHER THE RESULT OF INHOMOGENEITY OF THE MATTER ALONG THE HEIGHT OF THE CALORIMETER WHICH PERSISTS EVEN DURING STIRRING. THE CALCULATION RESULTS SATISFACTORILY AGREE WITH THE EXPERIMENTS AND THE INHOMOGENEITY PARAMETER WHICH IS EVALUATED IS REASONABLE (REASONABLE VALUES ARE ALSO OBTAINED FOR THE ISOTHERMAL DENSITY DISTRIBUTION RELAXATION TIME). THE PRESENCE OF IMPURITIES AND SMALL TEMPERATURE GRADIENTS IN THE SIMPLE MODIFY THE PEAK SPLITTING AND SPECIFIC HEAT DISCONTINUITY AND LEAD TO ADDITIONAL DISTORTION OF THE SINGULARITY. A SIMILAR BEHAVIOR IS ALSO OBSERVED IN SOLID BODIES NEAR PHASE TRANSITION POINTS OF THE SECOND KIND; THIS, APPARENTLY, CAN LIKEWISE BE EXPLAINED BY EXTERNAL ACTIONS ON THE SYSTEM, E.G. NONUNIFORMITY OF THE ORDER PARAMETER IN THE SAMPLE DUE, FOR EXAMPLE, TO AN EXTERNAL NONUNIFORM FIELD OR TO INHOMOGENEITIES PRODUCED DURING PREPARATION OF THE SAMPLE AND WHICH ARE NOT IN THERMODYNAMIC EQUILIBRIUM WITH THE LATTICE. VYSOKIKH TEMPERATUR AN SSSR.

FACILITY: INSTITUT

UNCLASSIFIED

USSR

UDC 621.375.67:621.382

MALYSHKOV, G.M. RUSLANOV, V.I.

"Regulation Of Hysteresis Loop Of Relay Circuits With The Aid Of Optoelectronic Converters"

V sb. Elektronnaya tekhnika v avtomatika (Electronics Techniques In Automation--Collection Of Works), Moscow, Izd-vo "Sovetskaya Radio," No 2, 1971, pp 50-59

Abstract: Use of optoelectronic semiconductor converters makes it possible, without the marked complications of widely known circuits, to produce separate regulation of the width of the hysteresis loop without change of the magnitude of the percentage of feedback. In the present work an optoelectronic semiconductor converter was used, consisting of an emissive gallium arsenide diode and a type PT-1K silicon phototransistor. Formulas for determination of the hysteresis loop of relay circuits with feedback of voltage and current (including a Schmitt trigger) are presented. The parameters are given of the elements of specific circuits. 3 fig. 5 ref.

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USSR

UDC 621.374

M
KRIVONOSOV, A. I., MALYSHEV, G. M., RUSLANOV, V. I.

"Pulse Circuits with Semiconductor Optical-Electronic Converters"

Novye beskontaktn. elektron. ustroystva. Ch. 1 (New Contactless Electronic Devices. Part 1), Moscow, 1970, pp 156-161 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G250)

Translation: A series of schematics are presented in which the advantages of image converter tubes are used: a relay made of mutually complementing transistors with positive feedback where the presence of an optical coupling in the image converter tube permits significant decrease in the resistance of the feedback resistor; a circuit using the inertial properties of the image converter tube with photoresistors; a pulse width modulator; and various logical circuits.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--BIOGEOCHEMICAL STUDIES IN THE RUDNYI ALTAI -U-
AUTHOR--(02)-MALYUGA, D.P., AIVAZYAN, A.D.
COUNTRY OF INFO--USSR M
SOURCE--GEOKHIMIYA 1970, (3), 364-71
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--ORE, GEOCHEMISTRY, BIOCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0852 STEP NO--UR/0007/70/000/003/0364/0371
CIRC ACCESSION NO--AP0118028
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118028

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

ABSTRACT. THE LANDSCAPES OF ORE DEPOSITS ARE DIFFERENT FROM NORMAL LANDSCAPES IN MORPHOL. AND BIOGEOCHEM. PARAMETERS. THE GEOCHEM. ANOMALOUS LANDSCAPES ARE CHARACTERIZED BY THE RELATIVELY LOW PH OF WATER EXT. FROM SOILS AND THE ELEVATED CONTENTS OF SD SUB4 PRIME2 NEGATIVE, FE PRIME3 POSITIVE, AND TRACE ELEMENTS (PB, CU, ZN, MO, AND AG) IN SOILS AND PLANTS. THE PLANTS ARE DEPRESSED, AND CHLOROSIS IS PREVALENT. THE PRESENCE OF CARYOPHYLLACEOUS PLANTS WAS OBSD. IN AREAS CONTG. CU MINERALIZATION. THE STEPPE ANOMALOUS LANDSCAPES ARE DIFFERENT IN SEVERAL PROPERTIES FROM THE FOREST ANOMALOUS LANDSCAPES: WASHING OUT OF TRACE ELEMENTS FROM UPPER HORIZONS WAS OBSD. IN FOREST LANDSCAPES AND NOT IN THE STEPPE LANDSCAPES; BIOL. ABSORPTION IS HIGH FOR PB IN FOREST LANDSCAPES AND FOR MO AND SR IN THE STEPPE LANDSCAPES. FACILITY: V. I. VERNADSKII INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2 C12 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--ZINC CHLORIDE INDIUM CHLORIDE PHASE DIAGRAM -U--
AUTHOR--(03)-KUKUYEV, A.M., MALYUGIN, A.S., SHERESKHOVA, V.I.
COUNTRY OF INFO--USSR
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(3), 683-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--PHASE DIAGRAM, ZINC CHLORIDE, PHYSICAL CHEMISTRY PROPERTY,
MELTING POINT, INDIUM CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3C04/C959 STEP NO--UR/0080/70/043/003/0683/0685
CIRC ACCESSION NO--AP0131544
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131544

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE ZNCL SUB2 INCL SYSTEM, THE FORMATION OF 2ZNCL SUB2 INCL AND ZNCL SUB2 2INCL SPECIES OCCURS. THE 1ST OF THEM CONTG. 35.5 WT. PERCENT INCL MELTS INCONGRUENTLY AT 227DEGREES; ZNCL SUB2 2INCL CONTAINS 69 WT. PERCENT INCL AND MELTS CONGRUENTLY AT 211DEGREES. FROM THE PHASE DIAGRAM OF THE TITLE SYSTEM, THE M.P.S. OF PURE ZNCL SUB2 AND INCL WERE 316DEGREES AND 224DEGREES, RESP. FACILITY: SEVERO-KAVKAZ. GORNOMET. INST., GROZHONIKIOZE, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SOLUBILITY OF IRON IN INDIUM -U-
AUTHOR--(02)-MALYUGIN, A.S., POGORELY, A.D.
COUNTRY OF INFO--USSR M
SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 107-110
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SOLUBILITY, IRON, INDIUM, X RAY DIFFRACTION ANALYSIS, PHASE
ANALYSIS, PHASE DIAGRAM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1497 STEP NO--UR/0149/70/000/002/0107/0110
CIRC ACCESSION NO--AT0130426
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0130426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLUBILITY OF FE IN IN WAS STUDIED BY X RAY DIFFRACTION WITH SPECIAL REF. TO THE QUESTION OF PRODUCING EXCEEDINGLY PURE IN FOR TECHNOLOGICAL PURPOSES. THE X RAY PATTERNS ALWAYS EXHIBITED TWO PHASES, NO INTERMETALLIC COMPOUNDS BEING FORMED. THE SOLUBILITY OF IN IN FE WAS NOT GREATER THAN 0.04 WT. PERCENT AT ROOM TEMP.; NO DISSOLUTION OF FE IN IN WAS OBSERVED. ANALYSIS OF THESE RESULTS, TOGETHER WITH EXISTING DATA, LED TO A CLEARER PICTURE OF THE FE-IN PHASE DIAGRAM THAN THAT HITHERTO ACCEPTED.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SODIUM AND POTASSIUM HYDROXYTTTRATES -U-
AUTHOR-(04)-IVANOVEMIN, B.N., BORZOVA, L.D., MALYUGINA, S.G., ZAYTSEV,
B.YE.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 666-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, THERMAL DECOMPOSITION, IR SPECTRUM,
SPECTROSCOPIC ANALYSIS, SODIUM COMPOUND, POTASSIUM COMPOUND, YTTRIUM
COMPOUND, HYDROXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1882 STEP NO--UR/0038/70/015/003/0666/0669
CIRC ACCESSION NO--AP0115701
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT79

CIRC ACCESSION NO--AP0115701

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. M SUB3 (Y(OH) SUB6) (M EQUALS NA OR K) WERE SYNTHESIZED IN MEQH SOLNS. THERMAL DECOMPN. OF M SUB3(Y(OH) SUB6) PROCEEDED VIA 2 ENDOTHERMAL EFFECTS, CORRESPONDING TO A CONVERSION OF (Y(OH) SUB6) PRIME3 NEGATIVE TO (Y(OH) SUB4) PRIME NEGATIVE AND TO A SUBSEQUENT DEHYDRATION AND FORMATION OF YO SUB2 PRIME NEGATIVE. THE IR SPECTRUM OF NA SUB3 (Y(OH) SUB6) IS GIVEN. FACILITY: UNIV. DRUZHBY NAR. IM. LUMUMBY, MOSCOW, USSR.

UNCLASSIFIED

1/2 019
UNCLASSIFIED
TITLE--INDICATIONS AND CONTRAINDICATIONS TO CHOLECYSTOSTOMY -U-
AUTHOR--MALYUGINA, T.A.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP
40-44
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SURGERY, DIGESTIVE SYSTEM, GALLBLADDER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1018
CIRC ACCESSION NO--AP0109169
STEP NO--UR/0589/70/104/005/0040/0044
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHOLECYSTOSTOMY IN ACUTE
CHOLECYSTITIS IS RATHER CONTRAINDICATED THAN INDICATED.
CHOLECYSTOSTOMY PROVED TO BE OF NO SUCCESS IN COMPLICATED DESTRUCTIVE
CHOLECYSTITIS. CHOLECYSTOSTOMY IS AN OBLIGATORY MEASURE WHEN OTHER
OPERATIVE PROCEDURES SEEM TO BE UNFEASIBLE FOR POOR SURGICAL RISK
PATIENTS. FACILITY: L-Y KHIRURGICHESKOY KLINIKI INSTITUTA
SKOROY POMOSHCHI IM. N. Y. SKLIFOSOVSKOGO.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--27NDV70
TITLE--RELIABILITY CRITERION OF CYTOPHOTOMETRIC DATA -U-
AUTHOR--(02)-LIBERMAN, L.I., MALYUK, V.I.
COUNTRY OF INFO--USSR
SOURCE--TSITOLOGIYA 12(2): 264-267. ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NUCLEUS, ONA, BIOLOGIC CELL, PHOTOMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0285 STEP NO--UR/9053/70/012/002/0264/0267
CIRC ACCESSION NO--AP0134090
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134090

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS A RELIABILITY CRITERION OF CYTOPHOTOMETRIC MEASUREMENTS IT IS POSSIBLE TO USE THE PRINCIPLE OF NORMAL DISTRIBUTION OF FILL UP FACTOR BETA AND RELATION OF EFFECTIVE OPTICAL DENSITIES Q. EXPERIMENTAL VERIFICATION OF THE CRITERION IN CYTOPHOTOMETRY OF DNA IN VARIOUS TEST OBJECTS SHOWED THAT PARAMETERS BETA AND Q HAD NORMAL DISTRIBUTION IRRESPECTIVE OF THE DISTRIBUTION PATTERN OF M, THE DEGREE OF NON HOMOGENEITY AND CORRELATIVE SIZES OF LUMINOUS PROBE AND NUCLEI. THE CRITERION REDUCES THE INFLUENCE OF UNCONTROLLABLE ERRORS ON THE RESULTS OF CYTOPHOTOMETRIC STUDIES. FACILITY: INST. ZOOL., ACAD. SCI. KUR. SSR, KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 621.373:530.145.6:621.317.17

MALYUKOV, B. A., KOROLEV, V. Ye., Tuyev, G. V.

"Determining the Thickness of Mirror Coatings in a Semiconductor Laser by the Kissig Method"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr. kachestvom i standartin. (Electronic Technology. Scientific and Technical Collection. Quality Control and Standardization), 1970, vyp. 4, pp 71-74 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D342)

Translation: For determining the thickness of mirror coatings, the Kissig method has a number of advantages: it is an absolute method of thickness measurement and does not require standards; it gives high precision; it does not destroy the specimen. A curve is given for reflection from a rhodium film 525 Å thick. All measurements of thicknesses of rhodium film and neodymium oxide films were done with the use of "copper" emission. The reproducibility of the described method was evaluated by measuring the thickness with respect to the maxima and minima of three curves for reflection from the same film. The Kissig method can be used to evaluate the nonuniformity of a coating. The accuracy of determining film thickness is high. Localization of the method is ~3 mm. However, the method is slow.

A. K.

1/1

UDO 621.52:539.23

USSR

MALYUKOV, B.A., UKRAINSKIY, YU. M., KOROLEV, V.YE.

"Nonstandard Method For Determining The Thickness Of Coatings With The Aid Of An X-Ray Fluorescent Spectrometer"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific Technical Collection. Materials), 1970, Issue 3, pp 120-121 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A54)

Translation: Formulas are derived for computation of the thickness of coatings, by the intensity of fluorescence under the effect of x-ray radiation. These formulas can be used during x-ray spectroscopic analysis of one-component film without use of standards. The precision of the proposed nonstandard x-ray spectroscopic method was equal to $\sim 1.7\%$ during analysis of thin films of tin deposited in a vacuum on pyroceramic substrates with respect to line $\text{SnK}\alpha$ and $\sim 4\%$ during analysis with respect to line $\text{SnLa}\alpha$. G.B.

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- 52 -

UDC 532.516

USSR

KHOLPANOV, L. P., SHKADOV, V. Ya., MALYUSOV, V. A., ZHAVORONKOV, N. M.

"A Theoretical Study of Gravitational Runoff of Thin Layers of Liquid Under Wave Formation"

V sb. Teplo- i massoperenos. T. 1 (Heat and Mass Transfer. Vol. 1 -- Collection of Works), Minsk, 1972, pp 186-197 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 85741)

Translation: The problem of the flow of a thin liquid film over a vertical plane in the absence of gas flow and the analogous problem of a film in the presence of a gas flow washing the film are solved in the nonlinear approximation. To solve the first problem the flow function and the variable thickness of the film are expanded in series in terms of harmonics. Equations for the expansion coefficients obtained after substituting expansions into the Navier-Stokes equations and the boundary conditions are solved by computers. Figures are given showing the lines of flow and the ratio of the surface velocity to the average (with respect to the film thickness) for two values of the Galilean number $G = gh^3/\nu^2$. It is pointed

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USSR

KHOLPANOV, L. P., et al, Teplo- i massoperenos. T. 1, Minsk, 1972,
pp 186-197

that the flow function and the tangential stress at the wall take on negative values at the valleys of the waves for $G > 45$. The second problem of a film interacting with a gas is solved under the assumption of a parabolic velocity profile of the liquid in the film (the Kapitza assumption). The problem of the motion of the gas is not solved but the interaction of the film with the gas is taken into account by assigning some constant tangential stress on the surface. The equation of the surface in this problem is also sought in the form of an expansion in terms of harmonics and the authors restrict themselves to the second approximation in terms of the amplitude. The value of the square of the amplitude is given for the case of downward flow $a^2 = R/g(1-T/2) - 1/3/2 + R/4G \cdot T$, where T is the dimensionless tangential stress. 14 ref. L. N. Maurin.

Miscellaneous

UDC 532.573

USSR

MYASNIKOV, S. K., KULOV, N. N., MALYUSOV, V. A., and ZHAVORONKOV, N. M.,
Institute of General and Inorganic Chemistry Imeni N. S. Kurnakov, Acad. Sc.
USSR

"Effective Velocity of the Free Surface of a Flowing Liquid Film"

Moscow, Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 6, No 6, Nov-Dec
72, pp 893-899

Abstract: A method was developed for the determination of the effective rate of movement of a free surface of a flowing liquid film \bar{w}_L . On the basis of the experimental data obtained, equations have been derived for the calculation of \bar{w}_L for four conditions of flowing: transitional flow ($35 \leq Re_L \leq 80$), first wave laminar flow ($80 \leq Re_L \leq 280$), second wave laminar flow ($280 \leq Re_L \leq 1600$), and turbulent flow ($Re_L > 1600$). It has been shown that the ratio of \bar{w}_L to the average liquid velocity \bar{v}_L in the range of laminar flow conditions is less than $3/2$. The velocity on the liquid film surface has also been determined in presence of surface active materials and dilute aqueous solutions of polymers.

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USSR

UDC: 532.72

BABAK, V. M., KHOLPANOV, L. P., MALYUSOV, V. A., ZHAVORONKOV, N. M.

"Steady-State Mass Exchange in a Liquid-Gas System Under Conditions of Laminar Opposed Motion of the Phases"

Teor. osnovy khim. tekhnol. (Theoretical Principles of Chemical Technology), 1971, 5, No 2, pp 179-186 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B832)

Translation: This paper deals with the problem of redistribution of matter between the gas and liquid phases in the case of laminar film run-off of a liquid along the walls of vertical plates under counterflow conditions. The equations of diffusion in the liquid and gas phases respectively are written in the form

$$v_{\text{ж}} \frac{\partial c_{\text{ж}}}{\partial x} = D_{\text{ж}} \frac{\partial^2 c_{\text{ж}}}{\partial y^2}, \quad v_{\text{г}} \frac{\partial c_{\text{г}}}{\partial x} = D_{\text{г}} \frac{\partial^2 c_{\text{г}}}{\partial y^2}$$

The boundary conditions are set up in the following manner: $c_{\text{ж}} = kc_{\text{г}}$, $D_{\text{ж}} \partial c_{\text{ж}} / \partial y = D_{\text{г}} \partial c_{\text{г}} / \partial y$ on the phase interface, $\partial c_{\text{г}} / \partial y = 0$ on the axis of the channel

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BABAK, V. N. et al., Teor. osnovy khim. tekhnol., 1971, 5, No 2, pp 179-186

formed by the vertical plates $\partial c_m / \partial y = 0$ on the surface of the plates. [Translator's note: the subscripts m and r in these expressions stand for liquid and gas respectively]. The concentration of transferred matter in the gas phase at the time of gas input into the system is c_0 , while the concentration of transferred matter in the liquid phase at the time of liquid input into the system is zero. For different values of the dimensionless parameters ϵ and β^2 , assuming a flat velocity profile in the liquid and gas phases, viz. $v_r = \bar{v}_r$, $v_m = \bar{v}_m$, where \bar{v}_r , \bar{v}_m are the average velocities of the gas and liquid phases respectively, formulas are derived for the average concentrations of liquid and gas at the output. It is shown that when the inequalities $\epsilon \beta^2 \ll 1$, $\epsilon \ll 1$ are simultaneously satisfied, resistance to mass transfer is concentrated only in the liquid phase, and when the inverse inequalities $\epsilon \beta^2 \gg 1$, $\epsilon \gg 1$ are simultaneously satisfied, the problem can be solved only in the gas phase, assuming that the concentration is equal to zero on the phase interface. Authors' abstract.

USSR

UDC 575.111:575.24:576.312.36:595.773.4

ALEKSANDROV, Yu. N., GERSHENZON, S. M., and MALYUTA, S. S., Molecular
Biology and Genetics Sector, Academy of Sciences UkSSR, Kiev

"Mutagenic Properties of DNA- and RNA-Containing Viruses Nonvirulent for
Drosophila"

Moscow, Genetika, No 9, 1971, pp 102-111

Abstract: Silkworm nuclear polyhedrosis, poliomyelitis, and influenza
viruses, which are nonvirulent for Drosophila and do not reproduce in this
insect, and the DNA of nuclear polyhedrosis virus induced lethal mutations
in the sex and second chromosomes. The complementation test revealed a
high degree of allelism of the lethals induced by the viruses, an indica-
tion of some selectivity of their action. Cytogenetic analysis of the
chromosomes in the salivary glands of Drosophila larvae disclosed only a
small number of chromosomal aberrations, suggesting that the lethal mutations
were very slight gene deletions or mutations. The nucleic acids apparently
play a major role in the induction of mutations by viruses that are not
infectious for Drosophila.

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Acc. Nr:

AP0041858

Abstracting Service:

CHEMICAL ABST.

11/70

Ref. Code:

UR0066

89455j Structure and reactivity of hydrazine derivatives.
XX. Kinetics of the acid hydrolysis of carboxylic acid hydrazides. Grekov, A. P.; Mavrenik, O. V.; Mal'vinenko, S. I. (Inst. Khim. Vysokomol. Soedin., SSSR). *Zh. Org. Khim.* 1970, 6(1), 94-7 (Russ). The reaction rates, equil. consts., activation energies, and Arrhenius frequency factors were detd. for $RCONHNH_2$ ($R = Me, Pr, MeOCH_2, PhOCH_2, Ph, p-MeOC_6H_4, p-MeC_6H_4, m-ClC_6H_4, p-Me_2NC_6H_4, m-O_2N-C_6H_4$, or $p-O_2NC_6H_4$) hydrolysis at 70 or 80° in 1 to 3M H_2SO_4 solns. The structure of R has only a minor effect on the hydrolysis kinetics due to a nearly simultaneous protonization and $(H_2O)^+$ addn. reaction. CPJR

REEL/FRAME

19751739

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Acc. Nr:

AP0041859

Abstracting Service:

CHEMICAL ABST

Ref. Code:

4170 418 0366

89456k Structure and reactivity of hydrazine derivatives.
XXI. Kinetics of the alkaline hydrolysis of carboxylic acid hydrazides. Grekov, A. P.; Shevchenko-Korzhenevskaya, I. K.; Malyutenko, S. A.; Mavrenik, O. V. (Inst. Khim. Vysokomol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 1(1), 98-101 (Russ). The reaction rates, activation energies, Arrhenius frequency factors, and reaction enthalpies were detd. of alk. RCONHNH₂ (I), R = Ph, p-MeC₆H₄, p-MeOC₆H₄, Pr, Me, or MeOCH₂) hydrolysis at 25, 40, or 60°. The ionization of I increases very rapidly with the concn. of alk. solns.; in 5% KOH, 90% I is ionized. The ionization hinders the attack of OH⁻ on the CO group of I. Thus, the hydrolysis rate decreases with an increase in the alk. soln. concn. Electron-donating substituents of R also hinder the attack of OH⁻, but they also decrease the ionization of I. Therefore, the effect of R structure on the kinetics of I hydrolysis is only slight. CPJR

REEL/FRAME

19751740

7

USSR

UDC: 539.293.621.315.592

NEMISH, I. Yu., MALYUTENKO, V. K., ZARUBIN, D. N., Institute of Semiconductors, Academy of Sciences of the UkrSSR

"Possibilities for Using Cadmium Antimonide in Semiconductor Technology"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika. Resp. Mezhd. Sb., No 7, 1972, pp 66-73

Abstract: The paper cites the basic properties of cadmium antimonide, and describes the technique for synthesizing this semiconductor compound. It is shown that cadmium antimonide single crystals containing appropriate dopants can be used to good effect as detectors of infrared radiation at wavelengths down to 3000 nm, and as active elements in semiconductor thermogenerators. A comparison of the parameters of conventional semiconductor devices with their CdSb-based counterparts shows a promising future for use of this semiconductor compound in instrument making.

1/1

USSR

UDC 537.311.35

NEMISH, I.YU., MALYUTENKO, V.K., ZARUBIN, L.N.

"Possibility Of Using Cadmium Antimonide In Semiconductor Technology"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved.sb. (Semiconductor Technology And Microelectronics. Republic Interdepartmental Collection), 1972, Issue 7, pp 66-73 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B40)

Translation: The principal physical properties of cadmium antimonide are presented and the technology of its preparation is described. It is shown that single crystals of CdSb doped with appropriate impurities can be used successfully as detectors of infrared radiation in the region of the wavelengths $\lambda \leq 3$ micron, and as the active elements of semiconductor thermogenerators. A comparison of the parameters of known devices and their analogs based on CdSb show the prospects for use of the latter in construction of semiconductor devices. 19 ref. Summary.

1/1

USSR

IL'ICHEV, N. N., KOROBKIN, V. V., KORSHUNOV, V. A., MALYUTIN, A. A.,
OKROASHVILI, T. G., and PASHININ, P. P., Physics Institute imeni P. K.
Lebedev, Academy of Sciences USSR

"Superbroadening of Spectrum of Ultrashort Pulses in Liquids and Glasses"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15,
No 4, 20 Feb 72, pp 191-194

Abstract: Experiments conducted by the authors showed that superbroadening of the spectrum of picosecond pulses at rather high radiation powers can be observed in practically any transparent dielectric. A neodymium self-mode-locking laser and two amplifier stages (length of active elements ~ 300 nm) were used in the experiments, permitting radiation with a total energy equal to 0.1-0.2 j in a train of 10-15 ultrashort pulses. ISP-51 and STE-1 type spectrographs were used to observe the spectral broadening. Liquids with various types of molecules and optical properties were used: carbon disulfide, nitrobenzene, benzene, toluene, isopropyl alcohol, carbon tetrachloride, water, and liquid nitrogen. Superbroadening of the spectrum was found in all these

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USSR

IL'ICHEV, N. N., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 191-194

substances except CS₂ and nitrobenzene. The superbroadening effect was also observed in a number of glasses and crystals (in K-8, F-1, L-26, K23S-7 glasses and in fused quartz and calcium tungstate). It is suggested that the observed superbroadening is due to strong laser phase modulation rather than four-photon interaction.

2/2

- 65 -

Molecular Physics

USSR

KOROBKIN, V. V., MALYUTIN, A. A., and SHCHELEV, M. Ya., Physics Institute
imeni P. N. Lebedev, Moscow

"On the Limiting Time Resolution of Electron-Optical Converters of the PIM-
UMI Type"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 1, Jan 71, pp 216-219

Abstract: An experiment showed that the basic limitation on the resolution of an electron-optical converter is the energy spread of electrons from the photocathode. The time resolution of the converter is characterized by an apparatus function consisting of the result of the action of a light pulse of infinitely small length on the converter. It is concluded that the half-width of the apparatus function of electron-optical converters of the PIM-UMI type is approximately equal to $2 \cdot 10^{-11}$ sec. This indicates that these converters can resolve 2 pulses with infinitely small length divided by a time interval of up to $(5-10) \cdot 10^{-12}$ sec. Since in this case the technical resolution was $5 \cdot 10^{-12}$ sec, it is assumed that the limiting value of the apparatus function of a converter of the PIM-UMI type has been achieved. Further narrowing of the half-width of the apparatus function would be

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USSR

KOROBKIN, V. V., et al, Zhurnal Tekhnicheskoy Fiziki, No 1, Jan 71, pp 216-219

possible only through a considerable rise in the field strength close to the photocathode or through some other methods decreasing the spread in the time of flight of photoelectrons from the cathode to the screen, possibly by making the electrons monochromatic. In this case, the basic limitation on the apparatus function of the converter is imposed by the time of establishing a field in the system of deflecting plates. In the first approximation this time is evaluated as d/c , where d is the diameter of the electron beam between the plates and c is the velocity of light.

2/2

1/2 037 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DYNAMICS OF RADIATION AND SPECTRUM CHANGES OF A NEODYMIUM LASER
WITH SELF LOCKING OF AXIAL MODES -U-
AUTHOR--(03)-KOROBKIN, V.V., MALYUTIN, A.A., SHCHELEV, N.YA.
COUNTRY OF INFO--USSR
SOURCE--JETP LETTERS (USA), VOL. 11, NO. 3, P. 168-73 (FEB. 1970)
DATE PUBLISHED----FEB 70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--NEODYMIUM LASER, LASER RADIATION SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1782 STEP NO--US/0000770/011/003/0168/0173
CIRC ACCESSION NO--AP0133687
UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133687
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACTS. REPORTS INVESTIGATIONS OF BOTH
THE TEMPORAL STRUCTURE OF THE EMISSION OF A NEODYMIUM LASER, AND THE
TIME EVOLUTION OF THE SPECTRAL DISTRIBUTION OF THIS EMISSION.
FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

Lasers & Masers

USSR

UDC 621.375.82

KORSHUNOV, V. A., KUZNETSOVA, T. I., MALYUTIN, A. A.

"On the Time Characteristics of a Ring Laser With a Clearing Filter"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 3, Moscow, "Sov. radio", 1972, pp 69-72 (from RZh-Fizika, No 1,
Jan 73, Abstract No 1D878)

Translation: A theory of the development of self-synchronization of modes in a ring laser is presented. Formulas were obtained describing the establishment of a relationship between the right and left wave in the clearing process of a nonlinear filter. An experimental comparison of the time characteristics of the right and left wave of a ring laser is made with the aid of an electron-optical chamber. It is shown that with a high concentration of the clearing absorber there is a strong correlation between the time characteristics of the right and left wave which weakens with a decrease in the concentration of the absorber. Authors abstract.

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USSR

MALYUTIN, I.S.

"Stability of Annular-Rib-Reinforced Cylindrical Shells Under the Action of External Pressure and Axial Force"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 2, Mar-Apr 71, pp 64-68

Abstract: A study was made of the stability of cylindrical shells reinforced with annular ribs at discrete locations. The tangential forces dependent on rib area and asymmetrical arrangement relative to the mean-shell surface were considered. Relations were established for components of displacement points of mean surface, differential operator for partial derivatives containing elements of external pressure and axial force, coordinates for axial and radial directions, shell radius and thickness, elastic modulus, Poisson coefficient, and number of ribs. As a result of application to a specific test model, it was concluded that the critical pressure in the case of internal and external placement of the ribs compares in the ratio of 1.76 to 1.54 respectively. Using the same relative scale, symmetrical arrangement of ribs yields a critical pressure of 1.21. For the case of tangential force between the shell and ribs, the critical pressure is practically the same at 1.3. It appears that the effect of asymmetrical placement internally and externally of the ribs is practically indistinguishable in this study.

1/1

USSR

UDC: 621.372.828

VOROB'YEV, P. A., MALYUTIN, N. D., SOLOMONIK, I. Sh.

"Computing the Capacitance of an Asymmetrical Zigzag Ribbon Line With Shielding"

Kiev, Izvestiya VUZ - Radioelektronika, vol. 14, No. 5, 1971, pp 489-493

Abstract: Open ribbon delay lines with better operating characteristics than ordinary lines of a similar type are examined. The superiority of these lines results from the use of shielding which reduces radiation losses, increases the linear capacitance, and thus reduces the dimensions of the ribbon conductor. For compactness in the 30-100 MHz range, the lines are manufactured in zigzag form. In this type of construction, the shielding reduces coupling between neighboring strips and provides phase shift linearity along the length of the line. Results are given of the investigation of the field of the line in electrostatic models, a picture of the field being obtained on electrically conducting paper. A method is offered for correcting the inaccuracies in computing the capacitance of the line committed by earlier researchers, and curves of experimental results as compared with the results computed by this method are given.

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MALYUTIN, K.V.

SPRS 59668

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VI-10. GROWTH OF PURE LAYERS OF GALLIUM ARSENIDE

(Article by K. V. Mal'utin, V. A. Yudin, K. N. Vladimirova, Novosibirsk: Novosibirsk, Institute for Problems in Materials Science and Physics, Siberian Federal University, 1977, 12-17 June 1977, p. 22)

The gas transport reaction method was used in the gallium-arsenic-trichloride-hydrogen system to grow pure epitaxial layers of gallium arsenide 10-20 microns thick with a mobility at 77° K to $1.5 \cdot 10^{15}$ cm²/vsec and an electron concentration of $5 \cdot 10^{15}$ cm⁻³. Highly pure gallium and arsenic trichloride were used to synthesize the films. The films were grown on substrates of semi-insulated gallium arsenide with disorientation of 5 to 10 degrees from the (100) plane to the (111) plane, and they had a mirror smooth surface. From measurements of the Hall EMF and the mobility by the Van der Pauw method in the temperature range of 20° K to 100° K, the donor and acceptor concentrations were determined equal to $1.6 \cdot 10^{15}$ cm⁻³ and $1.0 \cdot 10^{15}$ cm⁻³, respectively. The close correspondence to the experimental curve for the mobility as a function of temperature and the temperature curve of the electron mobility in the temperature range of 150° K to 300° K indicates the purity of the layers and the low level of structural disturbances in the grown layers of gallium arsenide.

USSR

UDC 621.37.434(08B.8)

M
MALYUTIN, N. I., KRIVITSKIY, R. L., MURAKHIN, A. A.

"A Balancing Clamper"

USSR Author's Certificate No 253127, Filed 30 Jan 67, Published 23 Jan 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D68 P)

Translation: This Author's Certificate introduces a clamper with an integrating capacitor which stores the peak voltages of brief bipolar pulses. To reduce the time constant of the charge and attenuate shunting of the pulse channel, the integrating capacitor is connected to the centertap of the secondary winding of the transformer (the primary winding is connected to the synchronization input). H. S.

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81

USSR

UDC 632.95

MALYUTIN, P. P., RADTSEV, V. S., SAVIN, V. P., SANGONOV, V. D., STONOV, L. D.,
SHAKIROVA, A. M., Ufa Affiliate of the All-Union Scientific Research Institute
of Agents for Plant Protection

"A Herbicidal Preparation"

USSR Author's Certificate No 311594, filed 21 Apr 70, published 19 Nov 71
(from RZh-Khimiya, No 11, Jun 72, Abstract No 11N470)

Translation: In order to intensify herbicidal activity and improve selectivity,
3-carbomethoxyaminophenyl N-(3-methyl phenyl)carbamate is used in a mixture
with benzanidoxyacetic acid in ratios by weight from 1:2 to 1:6. In experiments,
the mixtures inhibited the development of wild oat seedlings more actively
than their components used separately.

1/1

- 81 -

Power, Turbine, Engine, Pump

USSR

UDC: 62-235.5

MALYUTIN, P. V., GUNYAYEV, G. M., VORONTSOV, I. A., RUMYANTSEV, A. F.,
BARDINA, N. P., STEPANENKO, N. D., KARIMBAYEV, T. D., KISELEV, Yu. A.,
GORSHKOV, L. A.

"A Turbine Blade"

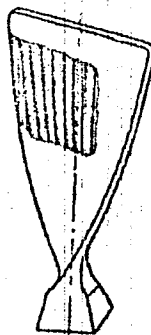
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 21, Jul 72, Author's Certificate No 344168, Division F, filed 31 Aug 70,
published 7 Jul 72, p 135

Translation: This Author's Certificate introduces a turbine blade for an axial compressor made of a laminar composition material. As a distinguishing feature of the patent, the rigidity and vibration strength are increased by making the blade from alternating layers of glass and carbon fiber fillers oriented relative to the longitudinal axis of the blade, 34-45% of the fiberglass-filled layers being oriented at angles from 0 to $\pm 15^\circ$, while 5-15% of the fiberglass-filled layers are oriented at angles from ± 75 to 90° , 20-30% of the carbon fiber-filled layers are oriented at angles from 0 to $\pm 15^\circ$, and 20-30% of the carbon fiber-filled layers are oriented at angles from ± 45 to $\pm 60^\circ$.

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USSR

MALYUTIN, P. V. et al., USSR Author's Certificate No 344168



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AA6052676

UR 0482

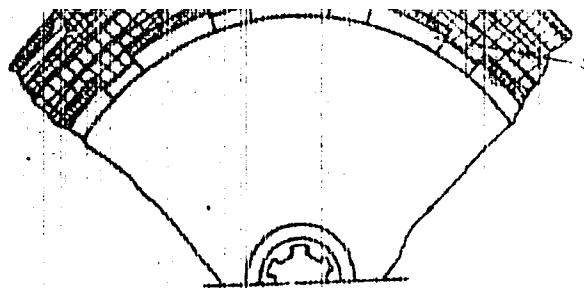
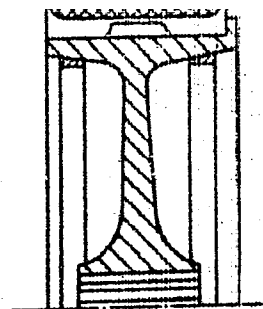
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

243136 AXIAL COMPRESSOR WORKING WHEEL where the
blades are placed on the power glass fibre
ring 3 with springed plate 4 fixed to the rim in the
longitudinal slots of the threads made of glass
fibres 6. This improves the blade (fixing)
durability.

10.4.67 as 1166291/24-G.P.V.MALYUTIN & A.F.RUMYANTSEV
(26.9.69) Bul 16/5.5.69. Class 27c. Int.Cl.F 04c.

Malyutin, P. V.; Rumyantsev, A. F.

19821412

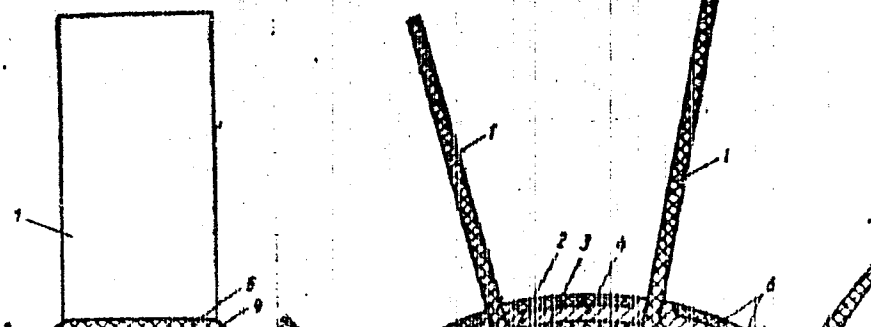


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AA0052676



Lasers / Masers

USSR

UDC: 62-50

VASIL'YEVA, N. P. and MALYUTIN, V. I.

"Principle of Constructing Universal Uniform Structures of Fine Magnetic Film"

Moscow, Avtomatika i telemekhanika, No 4, 1972, pp 149-155

Abstract: The authors expect that, with further technical development, it will be advantageous to design complex automation, remote control, and computer devices through the use of uniform logic controlled structures. The purpose of this article is to develop the basis for constructing these uniform structures with fine magnetic film using the motion of domains in low coercivity channels. A distinction is made between uniform structures of the nodal and the joint types: the nodal elements in the first type carry the full logic load while the joints have only a connective function; in the second type, the basic logic functions are carried out by elements placed in the joints of the structure while the nodes perform connective and some auxiliary logic operations. Both are discussed together with one of the possible variants for constructing four-directional uniform structures. The technique for preparing the magnetic film is explained, and the computed parameters for the system are given in a short appendix.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--MECHANISM OF INTERACTION AMONG DOPING ELEMENTS IN SEMICONDUCTORS
-U-
AUTHOR--(03)-GLAZOV, V.M., MALYUTINA, G.L., KISELEV, A.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1051-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SILICON, GERMANIUM, SEMICONDUCTOR MATERIAL, SEMICONDUCTOR
IMPURITY, MATHEMATIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0915 STEP NO--UR/0057/70/044/004/1051/1058
CIRC ACCESSION NO--AP0131501
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

272 022

CIRC ACCESSION NO--AP0131501

ABSTRACT/EXTRACT--(U) CP-C- ABSTRACT. INTERACTION BETWEEN DONOR AND ACCEPTOR IMPURITIES IN SEMICONDUCTOR BASED SOLID SOLNS. WAS STUDIED THEORETICALLY. THE EXISTENCE OF ELEC. NEUTRAL A PRIMEIRA PRIMEV COMPLEXES WITH COVALENT BONDS IN SI OR GE WAS SUPPOSED. EQUATIONS ARE GIVEN CONNECTING DONOR AND ACCEPTOR SOLY. WITH ACCEPTOR AND DONOR CONCEN., RESP. THEORETICAL VALUES OF IMPURITY SOLY. IN TERNARY SEMICONDUCTOR ACCEPTOR DONOR SYSTEMS AT HIGH TEMP. AGREED WITH EXPL. RESULTS FOR THE GE AL P SYSTEM AT 700-800DEGREES. FACILITY: MOSK. INST. ELEKTRON. TEKH., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 521.315.592

M
GLAZOV, V. M., MALYUTINA, G. L., and KISELEV, A. I., Moscow Institute of Electronics Technology; Moscow Institute of Steels and Alloys, Moscow, Ministry of Higher and Secondary Specialized Education, USSR
"Mechanism of Interaction Between the Alloying Elements in Semiconductors"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44 No 4, Apr 70, pp 1051-1058

Abstract: The simultaneous presence of donors and acceptors in a semiconductor-base solid solution effects a mechanism resulting in significant changes in electrophysical properties. In solid-state physics such interaction is termed as compensation. However, the mechanism of compensation of donors and acceptors in chemical terms has up to recently remained obscure. This theoretical study concerns the mechanism of interaction between donor- and acceptor-type alloying elements in semiconductor-type solid solutions. Equations have been derived correlating the donor solubility value as a function of acceptor content and vice versa. Use is made of a Ge-Al-P system to demonstrate the applicability of these equations to calculating solubility isotherms of alloying elements in semiconductor-acceptor-donor-type ternary systems at high temperatures. Tables in the original article provide comparative experimental and theoretical data of Ge-Al-P solubility at 700-800°C, with good agreement between the values. Another table cites similar agreement between calculated and theoretical solubility isotherms for the same system.

1/1

USSR

KATS, R. V., MALYUTINA, G. YA. and TOMILOV, B. YE.

"Application of the Method of Stochastic Approximation to the Search of the Maximum of a Regression Function"

Tr. NII Upravl. Vychisl. Mashin [Works of the Scientific Research Institute for Control of Computer Machines], 1971, No 3, pp 145-149 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V209)

Translation: The method of stochastic approximation is used to find the optimal value of temperature, corresponding to the maximum time between failures, for the KVM-1 computer.

YA. Kogan

1/1

USSR

UDC: 681.3

MALYUTINA, G. Ya., SKRIPAL', V. I., TOMILOV, B. Ye.

"Determination of the Density Function for the Distribution of Computer Recovery Time"

V sb. Nadezhnost' upravlyayushchikh vychisl. sistem. Ch. 1 (Reliability of Control Computer Systems--collection of works, Part 1), Kiev, 1970, pp 29-41 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV684)

Translation: It is proposed that a method of stochastic approximation, specifically the classical Robbins-Monroe method, be used for determining the density function for distribution of recovery time on the Ural-11-14 digital computer. The essence of this method is outlined in detail, and an interpretation is presented for distribution density functions on the interval $(0, \infty)$. The advantages of the given method over conventional methods of statistical processing of experimental data are mentioned.
V. Mikheyev.

1/1

USSR

UDC 615.285.7-099-07

VATUTIN, N. T., GONCHAROV, V. P., and MALYUTINA, L. M., Rudnichnaya Hospital

"A Case of Acute Chlorophos Poisoning"

Kiev, Vrachebnoye Delo, No 9, 1971, pp 140-141

Abstract: A 44-year-old man accidentally swallowed 30 mg of a concentrated solution of the organophosphorus insecticide chlorophos and within 10 min developed nausea, vomiting, weakness, and vertigo. He was brought to the hospital unconscious. After gastric and intestinal lavage with 2% salt solution and bleeding, he received intravenously 40% glucose, strophanthin, atropine, cordiamine, hydrocortisone and subcutaneously cytiton [a stimulant used in the treatment of respiratory disorders] and ephedrine. The medication restored consciousness within 3 hours, reduced dyspnea, and elevated arterial pressure to 110/70 mm Hg. Subsequent treatment included the administration of atropine intravenously and subcutaneously, daily intravenous injections of a mixture consisting of physiological saline, theophylline, and strophanthin, and intramuscular injections of hydrocortisone and vitamins B₁, B₆, B₁₂, C, penicillin, and neomycin. The patient was discharged in satisfactory condition after 2 weeks in the hospital.

1/1

USSR

UDC 536.4.088

AMATUNI, A. N., MALYUTINA, T. I., TSORIN, V. G., SHEVCHENKO, YE. B.

"Increasing the Accuracy of Determination of the Coefficients of Linear Thermal Expansion is a Way of Improving the Quality of Mechanisms and Instruments"

Moscow, Izmeritel'naya Tekhnika, No. 7, 1971, pp 40-41

Abstract: Note is taken of the necessity for increasing the precision of measurement of coefficients of linear thermal expansion for design calculations of thermal deformations in machine-tool and instrument production. There is shown the degree of accuracy to which the coefficient of linear thermal expansion of various materials must be known in order to provide for a high degree of reliability of installations working under variable conditions. Note is taken of the fact that dilatometers used for this purpose, either domestically produced or those imported extensively from abroad, do not provide a sufficiently high degree of measurement precision. In addition, the dilatometers being produced by Soviet industry are not of the type required in many instances. Recommendations are made that dilatometers of the appropriate types be produced, and that the ones presently being produced and imported should be subjected to more rigorous testing. Standardized test methods for various dilatometers should be developed. 1 bibliographic entry.

1/1

USSR

MALYUTOV, M. B. and FREYDLINA, V. L.

"Application of Information Theory to One Problem of Separation of Significant Factors"

Teoriya Veroyatnostey i yeye Primeneniya [The Theory of Probabilities and Its Applications], 1973, Vol 18, No 2, pp 438-440 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V168)

Translation: There are t variables (factors) x_a , $a = 1, \dots, t$, taking on values of 0 or 1. It is known that some $s \ll t$ of them are significant; function $y = 0$ if all significant factors are equal to 0, and $y = 1$ otherwise. We observe $z = 0$ or 1 with transition probabilities $r_{mn} = P\{z = n | y = m\}$, $m, n = 0, 1$. The problem is to find all significant factors by means of experiments consisting of assignment of values to the factors and observation of the corresponding z , the values of the factors being independent of preceding measurements. Information theory considerations are used to produce a bottom estimate for the number of experiments with fixed probabilities of erroneous decisions. A specific strategy is described for experimentation, as well as methods of analysis of the results. For them, estimates are given of the number of experiments and difficulty of their processing.

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D. Chibisov

UDC 519.2

USSR

MALYUTOV, M. B., MYATLEV, V. D.

"Minimax Plans for Checking the Adequacy of a Linear Model on a Cube and a Sphere"

Minimaksnyye plany proverki adekvatnosti lineynoy modeli na kube i share (Minimax Plans for Checking the Adequacy of a Linear Model on a Cube and a Sphere), Interdepartmental Laboratory of Statistical Methods, Preprint No 23, Moscow, Moscow University, 1971, 18 pp, 3 k. (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V165K)

Translation: Let in the domain $X \subset E^k$ the second order polynomial $\eta(x)$ be measured where the measurements are independent and equally accurate. The hypothesis $\theta_2 = 0$ is checked where θ_2 is the vector of the coefficients for the second degree terms. The parameter of noncentralness $\Delta(\epsilon, \theta_2)$ of the F-criterion depends on the experimental plan ϵ and the vector θ_2 . The minimax plans ϵ^* maximizing $\min \Delta(\epsilon, \theta_2)$ are introduced. These plans are found for the

case where X is a cube or a sphere. It turns out that the part D_2 of the dispersion matrix of estimates pertaining to the parameters θ_2 in these cases is a multiple of the unit part for the ϵ^* plan. Thus, $\Delta(\epsilon^*, \theta_2)$ does not depend on

θ_2 for $\theta_2^T \theta_2 = 1$.

USSR

KOROBKIN, V. V., MALYUZHIN, A. A., and PROKHOROV, A. M., Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR

"Phase Self-Modulation and Self-Focusing of the Radiation of a Neodymium Laser Under Self-Synchronization of Modes"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 12, No. 5, 5 Sep 70, pp 216-220

Abstract: Detection of the phenomenon of self-focusing and phase self-modulation of radiation in the active element of a neodymium laser operating in a self-synchronization mode is reported. It is shown that these effects have a considerable influence on the nature of the generation of this laser. The nonlinear changes in the index of refraction of the active element of the laser arising under self-modulation and self-focusing are evaluated. A laser with a ring resonator ($T \approx 8.5$ nsec) was used in the experiments. The length of the active element was 30 cm and dye number 3955 dissolved in nitrobenzene was used as a Q-modulator. Pictures show a considerable redistribution of radiation intensity under large fields in the resonator, while the intensity distribution in a free generation regime was uniform. Phase self-modulation is thus said to explain to a considerable degree the structure of the radiation spectrum of a laser with self-synchronization.

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MALYUZHINETTS, D. G. and BLOK, A. V.

"Some Scanning Characteristics of a Waveguide-Aperture Antenna Radiating into Mountain Rock"

V sb. Shakhtn. radiosvyaz' (Mining Radio Communication--collection of works) Moscow, 1970, pp 55-61 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B36)

Translation: The directional diagram and the angular frequency characteristics of the antenna are computed. Three illustrations. V. Ch.

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UDC 517.9:535.4

MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A. (Moscow)

"Diffraction of Plane Sound Wave by a Thin Semi-infinite Elastic Plate"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki,
Vol 10, No 5, Sep-Oct 70, pp 1210-1227

Abstract: The formulation of the problem of the diffraction of a plane sound wave by a thin, semi-infinite elastic plate and an approach to its solution were first given by G. D. MALYUZHINETS at the Fourth All-Union Acoustic Conference in 1958 in Moscow. This paper will soon appear in Trudy Akusticheskogo Instituta (Transactions of the Acoustic Institute). However, this problem was not completely solved for the following reasons: (1) the lack of a sufficiently complete theory on MALYUZHINETS functional equations; (2) no methods had been devised for the analysis of diffraction fields corresponding to the solutions of these functional equations; (3) the lack of a detailed analysis of the behavior of the Brewster angles corresponding to the thin elastic plate. Recently a fairly complete theory of MALYUZHINETS func-

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

tional equations was developed by A. A. TUZHILIN and methods devised for the analysis of diffraction fields in an angular region. These studies made it possible to obtain a solution to the title problem and to make a detailed analysis thereof. The present article sets forth these results.

The problem is to obtain a solution to the Helmholtz equation

$$(\Delta + k^2)P(x, y) = 0$$

in the (x, y) plane. The problem is reduced to two problems by

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

Express the composite field $P(x,y)$ as the sum of two addends: viz., odd and even parts. The two problems are:

1. In the half-space $x > 0$ to seek a solution to the Helmholtz equation

$$(\Delta + k^2)P_+(r, \varphi) = 0,$$

and 2. In the half-space $x > 0$ to seek a solution to the Helmholtz equation

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MALYUZHINETS, (deceased), G. D. and TUZHILIN, A. A., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 5, Sep-Oct 70, pp 1210-1227

$$(\Delta + k^2)P_{\pm}(r, \varphi) = 0.$$

The solutions to these problems (i. e., fields $P_{\pm}(r, \varphi)$) are sought in the form of Sommerfeld-MALYUZHINETS integrals, as a result of which nonhomogeneous MALYUZHINETS functional equations are obtained. General solutions are obtained for the resultant functional equations, and from these are determined the solutions which correspond to the required diffraction fields.

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USSR

UDC: 539.3:534.1

MALYY, V.I., Moscow

"Long-Wave Approximation of Loss of Stability During Impact"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4,
Jul/Aug 72, pp 138-144

Abstract: During the impact of a semi-infinite rod moving in the longitudinal direction against a massive obstacle a wave of compressive stress propagates in this rod. Under action of these stresses the rod may become elastically unstable, and buckling takes place. Similar phenomenon occurs with impact of plates and shells. An exact solution of loss of stability in an elastic semi-infinite rod during longitudinal shock is presented. The same method is used to obtain the loss of stability in an elastic plate with impact against its edge. In all cases the initial deflections are taken into account.

USSR

YEFIMOV, A. B., MALYY, V. I., UTESHEV, S. A., Moscow

"Loss of Stability of a Cylindrical Shell on Longitudinal Impact"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 20-23

Abstract: The forms of loss of stability of a cylindrical shell on longitudinal impact of an infinite mass moving with a velocity V against the end of the shell are studied in this paper. Equations are derived which define the bending of the shell during the linear stage of loss of stability. It is pointed out that the bends develop with time as the superposition of two types of waves. The amplitudes of the wave of the first type oscillate with time, that is, they remain limited, and the amplitudes of the second type waves increase exponentially with time leading to loss of stability of the shell. However, all of the waves of the second type do not make a significant contribution to the stability loss process since the amplitude of the wave which has the maximum growth rate overtakes the others and becomes predominant. The predominant wave is axisymmetric.

Equations are derived which define the characteristics of the predominant stability loss wave without restrictions on the impact velocity. After
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YEFIMOV, A. B., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 1, January-February 1971, pp 20-23

comparing the equations neglecting inertial reduction, that is, the effect of the inertia of the shell elements in the radial direction on the propagation of the longitudinal compression wave, and the equations with and without restrictions on impact velocity it is concluded that these factors have little effect on the form of stability loss. It is pointed out that it is known that in the case of a static load on a cylindrical shell the shape of the stability loss remains indeterminant in the linear approximation. In the case of an impact load on the end of the shell, the loss of stability with small bends occurs in axisymmetric form. Further development of the bends is not described by the linear equations of the shells. When the bends reach a magnitude on the order of h , significant membrane stresses occur in the shell. Together with the occurrence of nonlinear effects, the form of the stability loss has to lose its axisymmetric nature. When the bends increase to the point that the nonlinearity becomes the defining factor, the shell assumes the form of isometric bending of a cylindrical surface. The relations obtained in this paper for calculating the wavelength in the linear stage of stability loss give values which are 12% and 10% lower than the experimental values obtained by Lindberg and Herbert.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
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17-OXYCORTICOSTEROIDS UNDER NORMAL CONDITIONS AND IN STRESS -U-
AUTHOR--(02)-MALYZHEV, V.A., SUTKOVY, D.A.

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ABSTRACT/EXTRACT—(U) GP-O- ABSTRACT. AS SHOWN, IN GUINEA PIGS THYMECTOMIZED AT IMMATURE AGE, URINARY EXCRETION OF 17-OXYCORTICOSTEROIDS WAS ALMOST HALVED FOUR MONTHS AFTER THE OPERATION IN COMPARISON WITH INTACT ANIMALS. A MORE PROLONGED THAN NORMAL ACTIVATION OF ADRENAL CORTEX WAS SEEN BOTH AT THE EARLY AND AT THE LATE PERIODS AFTER THYMECTOMY, WHEN THESE ANIMALS WERE SUBJECTED TO THE ACTION OF UNFAVOURABLE FACTORS, SUCH AS OPERATION OR INFLAMMATION.

FACILITY: LABORATORIYA IMMUNOKHIMII GORMONOV I LABORATORIYA.
FACILITY: PATOFIZIOLOGII KIEVSKOGO INSTITUTA ENDOKRINOLOGII I OBMEAN VESHCHESTV.

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