

USSR

UDC 577.4

KARYOS, V. V., and PETRENKO, A. F.

"A Coding for the State of an Asynchronous Automaton Which can be Achieved on the Basis of a Model with Two-stage Memory"

V sb. Teoriya Konech Avtomatov i Yeye Pril. (Theory of Finite Automata and its Applications--collection of works), first edition, Riga Zinatne, 1973, pp 35-46 (from RZh Matematika, No 11, Nov 73, Abstract No 11 V528)

Translation: The functioning of an asynchronous automaton with 2-stage memory is determined by the following functions of transitions and output:

$$\chi(t) = f[\rho(t), \chi(t-1), \chi(t-2)]$$

$$\lambda(t) = \phi[\rho(t), \chi(t-1), \chi(t-2)] .$$

Here $\rho(t)$, $\chi(t)$, and $\lambda(t)$ are the input state, internal state, and output state of the automaton at moment t , respectively. The work suggests a method of designing the minimum length code of internal states to eliminate dangerous competition among intermediate variables in an asynchronous automaton with 2-stage memory. It is shown that the length of such a code is not greater than the length of the code for a classical model of an asynchronous automaton.

1/1

UDC 628.35

USSR

KARYUKHINA, T. A., KLEYN, S. A., SHANGINA, G. A., YANGOLENKO, L. V., and KRZHAPOLOV, SKAYA, L. Z., Moscow Construction Engineering Institute imeni V. V. Kuybyshev

"Biological Methods of Purifying Sewage From Chemical and Pharmaceutical Plants"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 11, 1971, pp 30-35

Abstract: The 1960-1969 literature on the subject is reviewed and the most effective methods discussed. In some instances, when the sewage contains no toxic compounds, it may be used directly for irrigation of fields. In most cases, a combined method yields the best results. Sewage containing large amounts of hormones must first be treated anaerobically. It is then aerated (waterfalls, air turbines, or other systems) for several hours up to 2 weeks, depending on what substances it contains. This aeration reduces the biological oxygen requirement by 90-98%. Neutralizers are added and the sewage is stirred until its pH becomes close to 7 (initial pH ranges from 2 to 10). Next, the sewage is kept standing in reservoirs. Harmless bacteria may be grown in it and later precipitated with chlorine. After adequate sedimentation of suspensoids, the sewage is run through sand and gravel filters,

1/2

USSR

KARYUKHINA, T. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 11, 1971,
pp 30-35

floating matter and deposits are collected, burned, and used as fertilizers or admixture to feeds. This treatment removes up to 95% of suspensoids. The filtrate may be drained into rivers and lakes, or it may be stored in reservoirs and be utilized during summer. Theoretical data indicate that practically any sewage can be purified adequately at reasonable cost.

2/2

- 78 -

1A0040694

KARYUKHINA

T.A.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

241304 AERATION TANK, e.g. for cleaning waste water, sewage, etc., consists of a triangular body

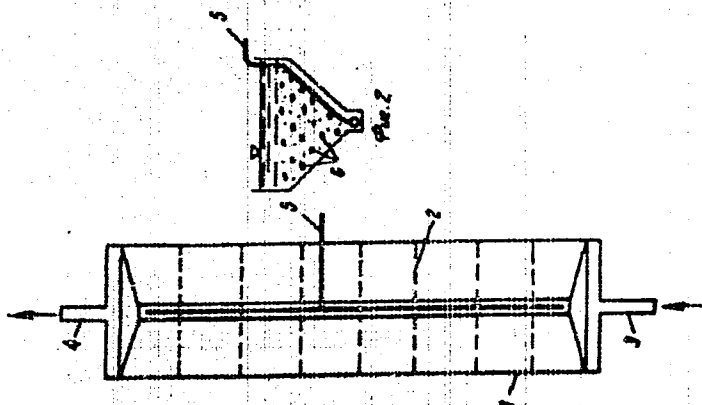
(1) along the length of which the perforated dividing plates (2) are located at intervals. The water, etc. to be treated is admitted at one end, and withdrawn from the other. The air-distribution system (5) is fed from the base. The whole length of the trough is filled with a highly-porous material having a density of less than 1 g/cm.3. After having gone through a mechanical cleaning process, the fluid to be treated is admitted and allowed to mingle with the air coming up from the base of the trough. Activated sludge containing both microflora and microfauna develops inside the pores of the filler material and in conjunction with the rate of aeration and rate of flow of the fluid under treatment, effects a continuous purification process.

19.7.66 as 1091080/23-26.S.V.YAKOVLEV et al(15.8.69)
Bul 13/1.4.69. Class 85c. Int.Cl. C 02 c.

19750316

6

AA0040694



AUTHORS:

Yakovlev, S. V.; Voronov, Yu. V.; Koren'kov, V. N.; and
Karyukhina, T. A.

AD

7/2

19750317

USSR

UDC 627.81.034(47+57)

PECHERKIN, I. A., KARZENKOV, G. I., KACHENOV, V. I.

"Revision of the Banks of Votkinsk Reservoir (1967)"

Izuch. i ispol'z. vodn. resursov SSSR. 1966-1967 -- V sb (Study and Use of USSR Water Resources. 1966-1967 -- Collection of Works), Moscow, Nauka Press, 1970, p 135 (from RZh-Elektrotehnika i Energetika, No 2, Feb 71, Abstract No 2 D46)

Translation: The results of routine observations of the bank formation process at Votkinsk Reservoir during its existence are presented. It is noted that the process is made up of abrasion, transport and accumulation of the transported sediment. The bank deterioration characteristic is investigated for specific genetic types of banks. The cyclicity of the process is emphasized. The close relation of bank erosion is observed only on slide and avalanche banks composed of loose deposits. On creeping banks and banks made up of Permian reds, the process proceeds more complexly and is not subordinate to known calculation formulas. When forecasting the bank deterioration here, it is necessary to consider the set of geodynamic processes developing in the bank. The basic ones of them are the following: wind erosion, creep and gully erosion. Significant attention has been given to the transport and accumulation of alluvium, the formation of underwater forms of relief and the shore area of the reservoir. The relations of these processes to the genetic type of bank is indicated. Some recommendations are made with respect to the problem of forecasting bank revisions.

1/1

- 75 -

KARZHAN V.V.

UR 0482

AA0052681

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 770

244051 VALVE BLOCK where in the housing 1 are mounted two three-way valves 2, each containing controlling piston 3, neutral slide plate 4 and lower plate 5. When valve 2 is in top disconnected position, the slide plate 4 separates volume a and b. Through channel B compressed air is supplied. With open valves (bottom position) compressed air is supplied to volume 2 which is connected by channel 7 to volume a. Channel 7 delivers compressed air to controlled installations. To activate the valve, the compressed air is directed by e.g. the solenoid valve 6 to volume e. Because the area of controlling piston 3 is larger than the area of lower plate 5, the three-way valve moves into connected, lower position. In de-activating by de-pressuring volume e, the compressed air from the valve is drained to the atmosphere through channel . In the

18

19821453

AA0052681

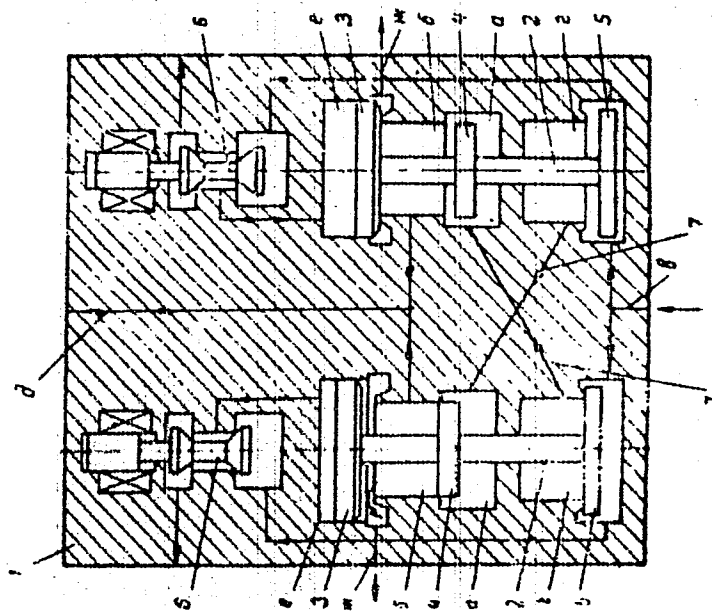
Morozov, V.F.; Karzhan, V.V.; Sakharov, L.N.; Voronezhskiy
Zavod Kuznechno-Pressovogo Oborudovaniya im. M.I. Kalinina

case when only one valve is de-activated, or only one is activated, the second valve cannot be accidentally moved even if compressed air enters volume e, because the sum of active areas of slide plate 4 and lower plate 5 is larger than the area of controlling plate 3. Activation of both valves is possible only with simultaneous supply of compressed air to both volumes e.
18.5.67. as 1156367/25-8. V. MOROZOV, V.V. KARZHAN, and L.N. SAKHAROV M.I. Kalinin Voronezh Factory of Forging and Pressing Equipment. (6.10.69.)
Bul.17/14.5.69. Class 47h. Int.Cl. F16h.

2/3

19821454

AA0052681



2/3

x.

19821455

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COPOLYMERIZATION OF PHENYLACETYLENE WITH SOME ALKYL METHACRYLATES
-U-
AUTHOR--(94)-KARZHAUBAYEVA, R.G., LOKOVA, G.M., GLADYSHEV, G.P., RAFIKOV,
S.R.
COUNTRY OF INFO--USSR
SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 115-17
DATE PUBLISHED----- 70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPOLYMERIZATION, BENZENE DERIVATIVE, ACETYLENE, ACRYLATE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0770 STEP NO--UR/0000/70/028/000/0115/0117
CIRC ACCESSION NO--AT0132868
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132868

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, PHC TRIPLE BOND CH (I) WAS
COPOLYMD. WITH H SUB2 C:CMCO SUB2 R (II) AT 60DEGREES IN SEALED TUBES
CONTG. 0.1PERCENT AZOBISISOBUTYRONITRILE (ON MONOMERS WT.). THE
REACTIVITY RATIOS (R SUB1 FOR II AND R SUB2 FOR I) WERE (R IN II, R
SUB1, AND R SUB2 GIVEN): ET, 2.1, 0.23; PR, 1.4, 0.22; BU, 1.7, 0.21;
ISO-BU, 1.9, 0.27.

UNCLASSIFIED

USSR

UDC A 539.1.073/074

KARZHAVIN, Yu. A., MATYUSHIN, A. T., MATYUSHIN, and KACHATURYAN, M. N., Joint
Institute of Nuclear Research, Dubna

"A New Method for Sampling Data from a Spark Chamber"

Moscow, Pribory i Tekhnika Eksperimenta (Instruments and Experimental Technology),
No. 5, Sept-Oct 1970, p 60-63

Abstract: Experiments were conducted to find a new method of sampling data from a spark chamber with solid electrodes. A piezoelement was used as a passive detector of ultrasound generated in the electrode by the spark. The detector was attached directly to the electrode or to a sound conductor attached to the electrode. An emitter-follower was used to transmit the detected signal into an acoustic channel. The amplitude of the signal depends on the material of the electrode, its thickness, the distance between the detector and spark, the spark energy, the length of the spark gap, and the acoustic matching of the piezo-element and the sound conductor or electrode. The best common material is duraluminum, and especially dural foil, which gives an amplitude of one order higher than does a plate. The spark chamber was used to record particle track signals. Curves of the detector signal amplitude for thyatron generator voltages of 20

1/2

USSR

KARZHAVIN, Yu. A., et al, Pribory i Tekhnika Eksperimenta, No 5, Sept-Oct 1970, p 60-63

and 25 kv are plotted. Two vibration frequencies of the plate were selected as optimum for measurement. Interesting effects were found when a high voltage pulse was transmitted to the plate through a needle point pressed directly on the plate or on a mylar film placed on the plate. The method yields data from the ends of the sparks in the gap. The signal propagation rate is constant, and both X and Y coordinates can be picked off from the same electrode. The method can be used with various chamber configurations, large and small gaps, and magnetic fields, as well as with photographic recording of results. A spherical chamber is suggested with a target at the center. Such a chamber can accommodate many spark gaps and 20 to 30 detectors or more. A block diagram is shown of a detector hookup to a computer for storing data during the time a beam is striking the target and partially processing the data during the pauses. Approximately 10 to 20 words of 11 to 12 bits can be passed during the dead time of the beam to a computer that can accept a number in less than 250 microsec. The BESM-4, M220, Dnepr-I, Dnepr-II, Minsk, and other computers are recommended. Counting circuits, consisting of an amplifier, shaper, and trigger, are used to register and store the data. The operation of the computer linking circuits is described. Orig. art. has 5 figs. and 4 refs.

2/2

USSR

KANZHAVINA, E. N., POPOV, A. B., Joint Institute of Nuclear Research, Dubna

"Neutron Resonances of Samarium Isotopes"

Moscow, Yadernaya Fizika, Vol 15, No 3, Mar 72, pp 401-405

Abstract: Gamma radiation transmission and capture were measured on the LNF neutron spectrometer at the Joint Institute of Nuclear Research with resolution of 6 ns/m on specimens enriched with Sm^{147} and Sm^{149} . A liquid multiple-section scintillation detector was used for measuring both transmission and radiation capture. The measurements were made in the 15-500 ev range on a 4096-channel analyzer. The data were processed on the BESM-4 computer. A comparison with data in the literature shows excellent agreement with results found below 100 ev for Sm^{147} . Agreement is less satisfactory for Sm^{149} with several new resonances observed below 100 ev than reported in the literature. This is attributed to the higher resolution of the LNF neutron spectrometer. The mean distances between resonances for Sm^{147} and Sm^{149} were found to be 7.2 ± 0.9 and 2.3 ± 0.3 ev, respectively, and the force functions for the two isotopes were $(3.7 \pm 0.6) \cdot 10^{-4}$ and $(5.1 \pm 0.9) \cdot 10^{-4}$ respectively. The results of this paper have been used by Yu. P. Popov et al

1/2

USSR

KARZHAVINA, E. N., POPOV, A. B., Yadernaya Fizika, Mar 72, pp 401-405

for evaluating the α -widths of Sm^{147} resonances (I. Vil'gel'm, Yu. P. Popov, M. Pshitula, Preprint P3-5553, Joint Institute of Nuclear Research, 1971).
The authors thank E. I. Sharapov, L. B. Pikel'ner, I. I. Shchelontsev, L. G. Popova, and Kim Sek Su for considerable assistance in the work. Two figures, bibliography of ten titles.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--REDUCTION OF SYNTHETIC FATTY ACIDS TO ALCOHOLS OVER A SUSPENDED
COPPER CHROMIUM BARIUM CATALYST -U-
AUTHOR-(02)-ULYANENKO, V.I., KARZHEV, V.I. *K*
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 335-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FATTY ACID, CATALYTIC HYDROGENATION, CHEMICAL REDUCTION,
CHROMIUM, COPPER, CALCIUM, ALCOHOL, BARIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0890 STEP NO--UR/0064/70/046/005/0335/0337
CIRC ACCESSION NO--AP0137918
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137918

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER OPTIMAL CONDITIONS (300-20DEGREES, VOL. INPUT RATE OF 0.6 HR PRIME NEGATIVE1, 300 ATM PRESSURE, H FATTY ACID RATIO OF 100:1, AND 7PERCENT CATALYST), CONVERSION OF A C SUB10-16 FATTY ACID FRACTION WAS 99PERCENT DURING HYDROGENATION WITH A SUSPENDED CU,CR,BA CATALYST, 1PERCENT OF WHICH HAD TO BE REPLACED DURING EACH CYCLE, AND THE HYDROGENATE CONTAINED 87.7-8.9PERCENT FATTY ALCS., 0.7-2.0PERCENT ESTERS, 0.7-0.9PERCENT AICDS, AND 7.0-8.0PERCENT H SUB2 O. IN THE CURRENT INDUSTRIAL PROCESS, INITIAL CONVERSION AND FATTY ALC. CONTENT WERE LOWER (97.3-8.4PERCENT AND 76.4PERCENT, RESP.) DURING REDN. AT 240-80DEGREES AND 300 ATM PRESSURE WITH A VOL. INPUT RATE OF 0.15 HR PRIME NEGATIVE1 AND A H FATTY ACID RATIO OF 200:1 IN A STATIONARY BED OF CU,CR,CA CATALYST WHICH DID NOT RETAIN ITS ACTIVITY.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ZEOLITE CONTAINING METAL CATIONS -U-

AUTHOR--(05)-KARZHEV, V.I., PIGUZOVA, L.I., GONCHAROVA, N.V., SVIRINA,
V.P., KRIVUZUBOVA, N.V.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,078
REFERENCE--OTKRYTIYA, IZOBREET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970 47
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, METAL ION, LANTHANUM COMPOUND, CHEMICAL PATENT,
THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0860

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136294

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZEOLITE, CONTG. CATIONS OF GROUP VI AND VIII METALS AND LANTHANIDES INTRODUCED IN THE REACTION OF CATION EXCHANGE, IS PREPD. BY MULTIPLE SATN. OF SOLNS. OF SALTS OF THE CORRESPONDING METALS. AFTER EACH SATN., THE ZEOLITE IS THERMALLY TREATED AT 140-550DEGREES. THIS ZEOLITE HAS A HIGH DEGREE OF NA CATION SUBSTITUTION.

UNCLASSIFIED

USSR

UDC 621.791.053:620.178.5

TIMOFEYEV, B. T., Engineer, KARZOV, G. P., Candidate of Technical Sciences, ZENZIN, V. N., Doctor of Technical Sciences, and DAUNIS, M. A., Candidate of Technical Sciences

"Low-Cycle Fatigue of the Metal of Welded Seams Made by Mechanized Methods"

Moscow, Svarochnoye P roizvodstvo, No 2, Feb 71, pp 38-40

Abstract: This work presents a study of the cyclical strength of welded joints of 22K steel produced by automatic welding under flux and by the electric slag method for low-cycle loading. The low-cycle fatigue resistance of the metal in a low-carbon seam and its strength properties depend significantly on the welding method, welding materials used, and heat treatment of the joint or structure: the greatest strength is achieved by hardening the metal of the seam, produced by electric slag welding with Sv-10GSMT wire, the least strength by normalizing the seam metal and using Sv-10G2 welding wire. Stress concentrators should not be allowed in welded structures of 22K steel made by mechanized methods, since this reduces the resistance to repeated static loading. The experimental data produced on durability for the welded seam metal with automatic and electric slag welding corresponds to the well known equation of Coffin.

1/1

- 87 -

USSR

UDC 537.311.3:546.26'28

BARINOV, YU.B., EULGANOV, YU.V., DEM'YANCHIK, D.V., IGLITSYN, M.I., IL'IN,
M.A., KASAGANOVA, K.G., PAVLOV, N.M., SOLCHATIN, V.N.

"Effect Of Irradiation On The Physical Properties Of Hexagonal Silicon Carbide"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-
Collection Of Works), Vol. 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 105-110 (from
RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10356)

translation: The effect was studied of irradiation by α particles and neutrons on the spectra of electronic paramagnetic resonance and the optical spectra of n-type α -SiC doped with nitrogen and p-type doped with boron. In the spectra of the electronic paramagnetic resonance of n-type specimens, the irradiation caused a decrease of the old and the appearance of a number of new lines. Irradiation of p-type crystals by α -particles lead to an increase of the optical absorption in the 2--25 micrometer region and irradiation by neutrons caused an increase of absorption at $\lambda < 0.55$ micrometer and a decrease of absorption in the $0.55 < \lambda < 6$ micrometer region. 3 ill. 1.V.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INFLUENCE OF IMPURITIES ON ULTRAVIOLET ABSORPTION IN SEMICONDUCTORS
-U-
AUTHOR--KASAMANYAN, Z.A. *K*
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK ARMJANSKOI SSR, IZVESTIIA, FIZIKA, VOL. 5, NO. 1,
1970, P. 10-19
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--UV ABSORPTION, SEMICONDUCTOR IMPURITY, KINETIC EQUATION, GREEN
FUNCTION, PERTURBATION THEORY, APPROXIMATE SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1996/1412 STEP NO--UR/0431/70/005/001/0010/0019

CIRC ACCESSION NO--AP0118401
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118401

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF A KINETIC TYPE EQUATION FOR A TWO PARTICLE GREEN'S FUNCTION AVERAGED WITH RESPECT TO THE IMPURITY CONFIGURATIONS, IN THE FIRST APPROXIMATION OF PERTURBATION THEORY WITH ALLOWANCE FOR TWO ENERGY BANDS. AN APPROXIMATE SOLUTION TO THIS EQUATION IS OBTAINED FOR THE CASE OF ISOTROPIC ISOENERGETIC SURFACES. THE BEHAVIOR OF THE ABSORPTION COEFFICIENT NEAR THE VAN'T HOFF CRITICAL POINTS IS EXAMINED. FACILITY: EREVANSKII GOSUDARSTVENNYU UNIVERSITER, YEREVAN, ARMENIAN SSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MIGRATIONS OF OPHONUS RUFIPES, COLEOPTERA, CARABIDAE -U-

AUTHOR--KASANDROVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZOOLOG ZH 49911: 56-60. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECTA, POPULATION LEVEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1620

STEP NO--UR/0439/70/049/001/0056/0060

CIRC ACCESSION NO--AP0127111

UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0127111
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. TAGGED BEETLES WERE CAUGHT IN A DAY AT A DISTANCE OF 15 M FROM THE PLACE OF RELEASE AND IN 6 DAYS AT 600 M. AT THE SAME TIME SOME TAGGED BEETLES WERE CAUGHT IN 12 DAYS AT A DISTANCE OF 3-15 M AND IN 30 DAYS AT 20 M. A CONCLUSION IS DRAWN THAT IN THE STUDIED POPULATION OF O. RUFIPES THERE ARE 2 GROUPS, OF WHICH ONE MIGRATES FROM THE CONTROL AREA AND ANOTHER STAYS ON IT. DURING THE EXPERIMENT A TENDENCY OF MOVING TO THE WEST WAS PECULIAR TO O. RUFIPES.
FACILITY: V. I. LENIN MOSCOW STATE PEDAGOG. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.391.1:519.27

KAS'ANYuK, S. A.

"On the Reconstruction of Wave Forms From Certain Elements at a Finite Number of Points"

Moscow, Problemy Peredachi Informatsii, Vol 9, No 2, Apr-May-Jun 73, pp 24 - 30

Abstract: There are a number of applications in which the reconstruction of a wave form from certain elements at a finite number of points is useful. This article considers the problem for the case in which a number of a priori boundaries on the spectrum exists. It is shown that a wave form with a finite spectrum can always be reconstructed from its values and the values of its derivatives at a finite number of points and that the technique is not unique if the "energy" of the spectrum is high enough. There is a minimum value of spectrum energy at which the problem of reconstruction is solved in a unique manner. A formula is given for calculating this value.

The reconstruction is also possible for a wave form with a minimum frequency characteristic of the spectrum; formulas for this calculation are given. Finally, the problem of reconstruction can be solved for wave forms with minimal intensity spectra; formulas for this calculation are also included.

1/1

- 49 -

USSR

KASAP, K., Department of Engineering Mechanics of Budapest Technical University

"Consideration of Deviator Deviation from Similarity When Determining Plastic Flow Energy"

Budapest, Mechanical Engineering -- Mashinostroyeniye, Vol 15, No 1, 1971, pp 17-25

Abstract: In plasticity theories the assumption is made that the stress deviator and the strain deviator increment are similar; in other words, the stress vector and the increment in the strain deviator vector are collinear. This assumption is not made in the present paper. An experimental study is made of the effect of the deviation of the stress deviator and the increment of the strain deviator from similarity on the specific work of plastic flow. The experiments were performed on thin walled nickle and copper tubes. The tubes were loaded under an axial tensile force and internal hydraulic pressure. Both simple and complex loads were considered.

Two methods were used to determine the specific work of plastic flow by the experimental data. In one case, it was assumed that the stress deviator and increment in the plastic flow deviator are similar, and in the other case,
1/2

USSR

KASAP, K., Mechanical Engineering -- Mashinostroyeniye, Vol 15, No 1, 1971, pp 17-25

the deviation from similarity of the deviators was considered. The difference between the specific works of plastic flow determined by the two methods was less than 2 percent in the investigated cases. The five-dimensional, orthogonal space of stress and strain deviators [A. A. Il'yushin, Plastichnost' (Plasticity), USSR Academy of Sciences Press, Moscow, 1963] was used in calculating the plastic flow energy.

2/2

61

USSR

UDC: 534.86

KASATKIN, B. A. and SAFONOV, V. I.

"Natural Frequency Spectrum of Ceramic Converters"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute) No 112, 1972, pp 18-24 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh668)

Translation: A theoretical investigation is made of the operation of an ultrasonic defectoscope for the case of an acoustical load and damper connected to a ceramic piezovibrator through an arbitrary number of thicknesses. The peculiarities of the pulse mode of the operation of the piezovibrator is taken into account in the solution using the Laplace transform integral. An expression is obtained for the stress on the receiving piezovibrator damper-piezovibrator load system connected to an electrical circuit with arbitrary parameters. It is shown that in the case of the ceramic converter, the natural frequency spectrum does not permit separation into electrical and acoustical resonances. A solution is found for the specific form of the electroacoustical load, electrically open, and electrically short-circuited piezovibrators. A numerical solution is found for the ceramic piezovibrator operating with water and steel in the region of the variation of the damping parameter and the electromechanical coupling coefficient. The effect of electromechanical coupling on
1/2

USSR

KASATIKIN, B. A. and SAFONOV, V. I., Izv. Leningr. elektrotekhn. in-ta, No 112, 1972, pp 18-24

the resonant frequency of acoustically unloaded, short-circuited converters is investigated.

2/2

- 17 -

USSR

UDC 621.382.2

KASATKIN, A.I., SEMKINA, O.I., NOSOV, YU.P.

"Concerning Statistical Regularity Of Distribution With Respect To Principal Electrical Parameters Of Germanium Diodes With Gold Bonds"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn.pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1972, Issue 4(68), pp 126-130 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No 11B169)

Translation: The paper carries out a study and a comparison of the statistical regularities which describe the distribution with respect to the parameters of semiconductors with gold bands, and of point semiconductor diodes. Summary.

1/1

USSR

UDC 621.791.011

KASATKIN, B. S., Doctor of Technical Sciences, TSARYUK, A. K.,
Candidate of Technical Sciences, and GEDROVICH, A. I., Engineer,
Institute of Electric Welding imeni Ye. O. Paton, Academy of Sci-
ences Ukrainian SSR

"Yield Bands in a Weld Joint"

Kiev, Avtomaticheskaya Svarka, No 6 (243), Jun 73, pp 1-4

Abstract: The authors study the features of the arrangement of yield bands in the zone of the joint near the seam. They show that weld heating leads to the formation of yield bands of various types. The plastic deformation of the metal in the zone near the seam has a three-dimensional character and the yield bands emerge on its surface. The character of the yield bands in this zone is determined by the stressed state. Under the effect of biaxial stresses of one sign, radial and transverse bands are generated as well as concentric circles (arcs). Bands of the type of logarithmic spirals and parabolas appear in the presence

1/2

- 56 -

USSR

KASATKIN, B. S., et al., *Avtomaticheskaya Svarka*, No 6(243), Jun 73, pp 1-4

of tensile and compressive stresses. The formation in this zone of different systems of yield bands indicates that plastic deformation takes place successively in several stages in the process of heating and cooling. The article contains 4 figures and 8 bibliographic references.

2/2

USSR

UDC 621.791.72:669.15-194

KASATKIN, B. S., Doctor of Technical Sciences, KOVBASENKO, S. N., Engineer, NAZARENKO, O. K., Candidate of Technical Sciences, ZADERIY, B. A., Engineer, and ZHIVAGA, L. I., Engineer, Electric Welding Institute imeni Ye. O. Paton of the Academy of Sciences UkrSSR

"Electron-Beam Welding of Low-Alloy 14Kh2GMR Steel"

Kiev, Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 4-8

Abstract: A study was made of the characteristics of electron-beam welding of high-strength low-alloy 14Kh2GMR steel plates, 100 x 100 x 8mm, at various heating conditions. High welding rates and small heating and cooling times result in size reduction of the metal structure in the thermal influence zone; this has a favorable effect on the strength and the impact ductility of the welded joint. At relatively high cooling rates, the joints do not show a tendency to the development of cold cracks. The mechanical properties of electron-beam welded joints are equal in quality to the initial material. The wide potentialities in varying the heat conditions in electron-beam welding make this

1/2

USSR

KASATKIN, B. S., et al., *Avtomaticheskaya Svarka*, No 7 (244), Jul 73, pp 4-8

welding method promising for industrial use in producing metal constructions from high-strength bainite steels. Recommendations are given for selecting optimum welding conditions for heat-treated low-alloy steels. Five figures, one table, seven bibliographic references.

2/2

USSR

UDC 621.791.756.011

ASNIS, A. YE., KASATKIN, R. S., IVASHCHENKO, G. A., and MUSIYACHENKO, V.F.,
Institute of Electric Welding imeni Ye. O. Paton

"Increasing Strength of Weld Joints Operating at Low Temperature"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 33-34

Abstract: One of the measures for increasing workability of weld joints at low temperature is the removal of stress concentrators. These stresses are most significant at points where the seam merges with the base metal. A smooth transition can be obtained using an electric arc furnace with a nonconsumable electrode. At the Institute of Electric Welding work was performed to explain the effect of electric-arc processing on the resistance of weld joints to brittle failure at low temperature. Tests were conducted using steel 14KhMDFR where welded samples were subjected to a 300-ton force at -60°C . Seams in the initial state fractured along the weld seam; seams which had been mechanically cleaned failed in the seam itself; and seams which had been electric-arc treated failed in the base metal at some distance from the weld. Weld joints made in steels 09G2S and 10G2B which had been tempered at 650 and 550°C possessed a higher impact strength than those seams which had not been heat treated. Thus it was concluded that local electric-arc treatment is an effective method of increasing the workability of joints at low temperature. 2 figures, 3 tables.

1/1

USSR

UDC 621.791:693.8:669.15-191

KASATKIN, R. S., MINEYEV, E. A., MUSIYACHENKO, V. F., and MIKHODUY, L. I.,
Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Certain Features of the Design and Manufacture of High-Strength Welded Constructions"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 70, pp 32-34

Abstract: Basic types of welded joints and assemblies for high-strength steel structures, e.g., skips for hauling coal, are considered. Sketches of welded joints and assemblies made of St 3 and 14Kh2GMR steels are shown. An analysis is made of construction mistakes, and recommendations are made to avoid their repetition. Fifteen skips manufactured from 14Kh2GMR steel are being used successfully in the Donbass mines. Skip weight has been reduced by 28 to 35%.

1/1

USSR

UDC 621.791:620.192.7

KASATKIN, B. S., SOTCHENKO, V. P., KORAB, G. N., PETRUKHA, V. YE.,
MASLENKOV, YU. A., and BELOV, A. S.

"Device for Studying Slow Deterioration of Welded Joints"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, pp 74-75

Abstract: This is a brief report on a device developed and manufactured at the Institute of Electric Welding imeni Ye. O. Paton for studying slow deterioration of welded joints. It automatically holds a given load on the specimen and changes it in accordance with a preset program. The specimens can be welded in the longitudinal and transverse directions with respect to the loading axis manually or automatically under flux and in shielding gases. A schematic and the basic parameters of the device are presented.

1/1

- 82 -

USSR

K

UDC 621.791.756.356:669.15-194

KASATKIN, B. S., MUSIYACHENKO, V. F., MIKHODUY, L. I., Electric Welding Institute
imeni Ye. O. Paton and BULGAKOV, A. S., Uralmashzavod imeni S. Ordzhonikidze

"Welding Low-Alloy, Highly Durable Steels 14Kh2GMR and 14KhMNDFR"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 39-42

Abstract: The steels referred to in the title 14Kh2GMR and 14KhMNDFR were designed for various types of welded structures: bridges, high-pressure vessels, storage tanks, hydraulic equipment, transport lifting mechanisms, trucks, railroad cisterns, and the like. The purpose of the article is to recommend rational choices of welding materials, welding modes, and special technical operations to guarantee that a union of the two metals will have the same durability of the basic metals and that it will be sufficiently resistant to cold. The following welding features are discussed: electrodes, flux and wire, measures for preventing crack formation and welding modes. Illustrations include a drawing showing tests for determining the tendency of welding seams to crack, a schematic of a pneumatic tensometer for determining transverse specimen deformations, and a diagram of transverse deformations in 14Kh2GMR steel during and after welding. A table of recommended preliminary heating temperatures for the two types of steel mentioned in the title is included.

1/1

USSR

UDC 621.385.6

KASATKIN, L.V.

K

"Matching Of Electron Flows With A Focusing Magnetic Field In An O-Type Electro-vacuum Device"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 3, pp 35-46 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A20)

Translation: On the basis of linearization of the input of a differential equation, the problem of matching electron flows with a focusing magnetic field is solved analytically. Formulas are obtained for determining the parameters of the beam and system, guaranteeing the growth of a nonpulsating electron flow, and allowances for these parameters are evaluated. The limits of applicability of the solutions obtained are found by a comparison with the results of numerical computations. During analysis of the interference method of matching, the possibilities are considered for compensation of radial pulsations with the introduction of 1 and 2 magnetic inhomogeneities. It is shown that with use of two magnetic inhomogeneities fixed along the axis of a device, with controlled amplitudes and polarities, compensation is possible for radial pulsations with any phases. The problems of matching are considered for cases of complete screening of the cathode of an electron gun from the magnetic field. 5 ill. 9 ref. C.B.

1/1

USSR

KASATKIN, L.V.

UDC 621.385.6

K
"Evaluation Of Correction Of Focusing Magnetic Field With Dynamic Effects Taken Into Account"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 1, pp 74-85 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A19)

Translation: As the result of a rough analysis based on data from numerical computations on a digital computer for a traveling-wave tube, the dynamic transverse forces are determined of a space charge acting on a boundary electron flow, as well as the characteristics of a corrected axial distribution of the magnetic induction, which guarantees compensation of the dynamic debunching in devices using the + 1st special harmonic of the field of the decelerating system of the chain of resonators type. Summary.

1/1

USSR

UDC: 621.385.632

DANOVICH, I. A., KASATKIN, L. V., LEBEDEV, A. V., PETRANGOVSKIY, A. N.

"A Type O Traveling Wave Tube With Reversible Shielded Magnetic Focusing System"

USSR Author's Certificate No 256882, filed 23 Nov 67, published 1 Sep 70
(from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 5A176P)

Translation: A type O traveling wave tube is proposed with reversible shielded magnetic focusing system. The focusing system has flat pole pieces made of a magnetically soft material located at points of reverses in the magnetic focusing field. As a distinguishing feature of the patent, the magnetic field levels and high azimuthal homogeneity of the focusing field which are required for shaping the electron beam are ensured by varying the pitch of the reversible magnetic focusing system, decreasing the distance between adjacent pole pieces and the axial dimensions of the corresponding magnets in the end regions of the system and at points where energy is coupled out.

1/1

Acc. Nr: 0044601

Ref. Code:

UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 67-71

ON HYPERTENSION IN NEPHROLITHIASIS

M. R. Kasarkin

Summary

Renal hypertension develops against the background of a protracted course (not less than 3-5 years) of calculous pyelonephritis: in contrast to hypertensive vascular disease it is refractory to hypotensive therapy. After the removal of the calculus and elimination of pyelonephritis the arterial pressure commonly drops down to normal values. The pathogenesis of calculous hypertension consists in those structural-functional changes which take place in the kidneys in pyelonephritis and which finally lead to sclerosis of vessels and hemodynamic disturbances of the kidneys. However, finally this problem has not been solved.

//

REEL/FRAME
19771277

DI 02

USSR

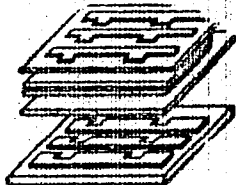
UDC: 621.3.013.7

ARSHINOV, V. I., BERKOVICH, S. Ya., KASATKIN, V. G., LAPIR, G. M., MAZITOV, R. K.

"A Cryotron Thin-Film Integrated Circuit"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyya Obrazttsy, Tovarnyye Znaki, No 30, 1970, Soviet Patent No 282433, Class 21, filed 19 Jun 69, p 61

Abstract: This Author's Certificate introduces a cryotron thin-film integrated circuit which contains a shielding film of superconductive material, insulating layers, and layers with cryotrons and hook-up elements. As a distinguishing feature of the patent, the possibility of short circuits between elements through the shielding film is reduced and manufacturing technology is simplified by breaking up the shielding film into sections which are electrically insulated from each other and are located on different sides of the layers which contain the cryotrons and the hook-up elements.



1/1

Vector Studies

USSR

UDC 599(282.6)(282.247.41):591.9

KASATKIN, V. I., Dosangskoye Section of the Astrakhan Antiplague Station

"Changes in Distribution of Mammals in the Volga Delta Caused by Regulation of the Volga's Flow and Regression of the Caspian Sea"

Moscow, Zoologicheskii Zhurnal, Vol 50, No 8, Aug 71, pp 1,220-1,227

Abstract: Due to the fall in the water level of the Caspian Sea, the total surface area of the lower Volga Delta zone has considerably increased and the ecological picture of the various zones has differentiated. Specific regional complexes have developed on new drylands. However, apart from a few exceptions, the various mammalian species inhabiting the new predelta islands are identical with those living on islands which belong to the lower delta zone. As a result of the decreased water volume carried by the Volga River, the level of erosion has dropped and many lagoons have dried up. Because of the thorough drainage of ground water from islands, areas inhabited by *Arvicola terrestris*, *Lutra lutra*, and *Desmana moschata*, and the total of these have markedly diminished, while some desert and steppe species (*Meriones tamariscinus*) are proliferating and spreading over wider areas. Regulation of the Volga's flow has considerably reduced

1/2

USSR

KASATKIN, V. I., Zoologicheskiy Zhurnal, Vol 50, No 8, Aug 71, pp 1,220-1,227

the detrimental spring and summer floods. However, the higher water level in winter prevents muskrats from spreading and makes winter living conditions even more difficult. The proportion of the various murine rodents has changed. In the lower delta zone, the number of field mice (*Apodemus agrarius*) has decreased, while house mice (*Mus musculus*) have become predominant.

2/2

- 25 -

UDC 8.74

USSR

KASATKIN, V. N., PEREKHOD, I. A., STARIKOVA, N. G.

"Some Problems of the Method of Teaching Programming for Digital Computers"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 121-129 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V407)

Translation: The available experience in teaching a course in "Fundamentals of Cybernetics" in the middle school in which significant attention must be given to the problems of utilizing digital computers and, in particular, programming, is reflected, and this problem is discussed. A two-level procedural scheme is proposed as the basis for the programming course in the middle school. On the first level the students are familiarized with the principles of computer organization of computation with manual programming. For this purpose the Posta computer was selected. It had been manufactured in two versions of the technological execution -- relay and on the basis of the MIR series of elements. The description of this computer is presented in the appendix. In the second stage of the training, provision is made for familiarization with the principles of automation of programming and the study of algorithmic languages. The idea of

1/2

- 44 -

USSR

KASATKIN, V. N., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 121-129

developing a Provisional Algorithmic Language has been advanced. This language must 1) be sufficiently general to reveal the essence of the description of the most varied programs, 2) be free of extraordinary details, 3) as an inseparable part of the system of its operators, include those which permit programs to be written not only for numerical but also for analytical data processing. It is proposed that the subset of languages of the MIR series digital computers, in particular, the ANALITIK language, be taken as the basis for such a language. The first version of a complete set of operators of the Provisional Algorithmic Language is presented in the appendix.

2/2

USSR

UDC: 681.3

KASATKIN, V. M., PEREKHOD, I. A., LITVINENKO, V. M., KHRISTIN, I. V.,
ZDOROVISEV, A. A.

"Algorithmic Station System, and the Teaching of Programming in Secondary
Schools"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of
Digital Computers for the Teaching of Programming--collection of works),
Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
TV779)

[No abstract]

1/1

UNCLASSIFIED

SECTION III 501 SELECTED RESEARCH WORK
FACULTY

PC5-29

SEPT 71

Name: Institute of Biophysics, Pushchino
Description:

(U) During this quarterly reporting period, 25 new articles were

Biophysics
identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute.

These personalities, the subjects of the articles, and the dates are given

below:

All biophysics/physiology

Allyeva, S. A.	phosphorylation	1972 (32)
Arkayeva, G. F.	radiation effect	1970 (35)
Artipova, D. F.	radiation effect	1971 (36)
Ashina, Ye. I.	hypoxia	1969 (37)
Bregadze, I. F.	radiation effect	1970 (38)
Busel, Ye. P.	luminescence	1970 (39)
Dmitriyeva, T. I.	radiation effect	1970 (39)
Dmitriyeva, V. A.	blood plasma	1969 (40)
Domareva, O. P.	radiation effect	1970 (39)
Dubrov, A. P.	biochemical analysis	1971 (41)
Gabelova, N. A.	muscle physiology	1971 (42)
Gannasl, Ye. E.	radiation effect	1970 (35)
Iukova, H. N.	serum albumin	1971 (43)
Kasatkina, V. S.	phosphorylation	1971 (32)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kislov, A. N.	sialivary gland	1970 (45)
Klyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (45)
Koshelova, G. N.	biochemical analysis	1971 (41)

INITIALS

Kuzmina, S. V.	tissue culture	1970 (47)
Nurkovich, D. S.	lactate dehydrogenase	1971 (48)
Mudvedeva, I. F.	radiation effect	1971 (46)
Peshkova, L. V.	phosphorylation	1971 (49)
Prevezich, L. A.	antibiotic	1970 (50)
Redionova, M. A.	mitochondrion	1971 (51)
Shechpakina, V. N.	phosphorylation	1971 (49)
Skobeyev, Ye. M.	radiation/vibration	1970 (52)
Shchegolev, V. N.	radiation effect	1970 (35)
Tovstolov, V. D.	blood plasma	1969 (40)
Ushakina, N. V.	lactate dehydrogenase	1971 (48)
Vilenchik, M. M.	radiation effect	1970 (53)
Zamyatnin, A. A.	muscle physiology	1971 (42)

(31)

Pubrov and Koshuleva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Stozhenkova, V. L. Hignuhina, and A. H. Kozin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE INFLUENCE OF THE FACTOR OF DYNAMIC NONSHARPNESS ON THE
SCANOGRAPHIC INFORMATION -U-
AUTHOR--(04)-ZUBOVSKIY, G.A., PAVLOV, V.G., FOKHT, A.S., KASATKIN, YU.N.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 41-49
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIOGRAPHY, LIVER, LUNG, HEART, IMAGE CONTRAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1025

STEP NO--UR/0241/70/015/006/0041/0049

CIRC ACCESSION NO--AP0130060

UNCLASSIFIED

2/2 C30

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130060
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE AUTHORS DISCUSS THE INFLUENCE OF THE FACTOR OF DYNAMIC NONSHARPNESS, WHICH OCCURS DURING SCANOGRAPHIC INVESTIGATION OF THE LIVER, LUNGS AND HEART IN THE PROCESS OF THEIR NORMAL ACTIVITY, ON THE ACCURACY OF THE IMAGE OBTAINED. IT WAS FOUND THAT THE REFERRED TO FACTOR DECREASES THE RESOLVING CAPACITY OF SCANNING AND STATISTICAL SIGNIFICANCE OF REGISTRATION. METHODS OF CORRECTING THIS FACTORS ARE PROPOSED. BEST RESULTS WERE OBTAINED WITH THE USE OF A GAMMACHAMBER, PROVIDED THE DURATION OF EXPOSITION IS NOT OVER THE TIME OF POSSIBLE BREATHING RETENTION, I. E. NOT MORE THAN 30 SECONDS.
FACILITY: MOSKOVSKIY NAUCHNO-ISSLED. RENTGENO-RADIOLOGICHESKIY INSTITUT MZ RSFSR.

UNCLASSIFIED

USSR

KASATKINA, I. L., and NIFANT'YEVA, A. K., Institute of Regional Pathology,
Ministry of Health, Kazakh SSR

"Comparative Study of Primary and Secondary Chronic Brucellosis"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 4, 1971, pp 29-31

Abstract: Analysis of the case histories of 1,139 persons hospitalized from 1961 to 1967 with chronic brucellosis, 855 with the primary form and 284 with the secondary form, failed to disclose any significant qualitative differences between the two forms in symptoms, clinical course, or results of therapy. Some of the symptoms (e.g., temperature, spleen and liver enlargement, allergic neurologic, and hematologic disorders) were slightly more pronounced in the secondary form, but the course of the disease was not necessarily milder. The effects of therapy were somewhat better in patients with the primary form of chronic brucellosis. Clinical recovery or marked improvement occurred in 59% of the cases compared with 45% of the cases of secondary chronic brucellosis. It is noted that the primary chronic form may have a more unfavorable course because of diagnostic difficulties and consequent lateness in initiating therapy.

1/1

USSR

KASATKINA, I. L., Kazakh Scientific Research Institute of Regional Pathology

"Clinical Picture and Treatment of Chronic Brucellosis"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 6, 1971, pp 44-46

Abstract: The clinical symptoms of chronic brucellosis are variable because any organ or system may be involved and to various degrees. Treatment, therefore, has to be strictly individualized taking into account the activity of the infectious process, the nature and pathogenesis of the lesions. The pathogenesis of the disease may combine elements of metastasis, allergic reactions of the rheumatic type, and autoimmune mechanisms. Hence a combination of therapeutic measures may be required. Satisfactory results do not generally follow the administration of antibiotics and vaccine, as they do in acute brucellosis. The main pathogenetic mechanisms often follow one another. For example, the persistence of a metastatic focus promotes hypersensitization, which can give rise to joint lesions of the rheumatic type. And hypersensitization to a specific antigen, widespread infiltration of plasma cells and lymph cells, presence in the blood of the products of connective tissue necrosis, and depolymerization of collagen structures may result in the development of pathological reactivity and autoallergic disorders.

1/1

Stress, Strain and Deformation

USSR

KASATOCHKIN, S. V., ALAYEVA, T. I., YAKOVLEV, YE. N., and VERESHCHAGIN, L. F.,
Institute of High-Pressure Physics, Academy of Sciences USSR, Akadengorodok,
Moscow Oblast

"Pressure Change of Cubic Splitting Parameter in EPR Spectrum of Gd^{3+} Ion in
Fluorite-Type Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 15, vyp 1, Jan 73, pp 312-313

Abstract: The authors studied the effect of hydrostatic pressure (up to 10
kbar) on the spin hamiltonian parameters of the Gd^{3+} ions in fluorite-type
crystals. CaF_2 , SrF_2 , and BaF_2 doped with Gd^{3+} ions (0.1 at. percent) were
studied. It was found that the parameter b_4 varies according to the law

$$b_4 \approx a^n,$$

where $n \approx 7$. Previous experiments on the variation of the Gd^{3+} ion EPR
spectrum with temperature in fluorite-type crystals (T. REVAI) give the value
 $n \approx 15$.

1/2

USSR

KASATOCHKIN, S. V., et al., Fizika Tverdogo Tela, Vol 15, vyp 1, Jan 73, pp 312-313

Thus, there are great differences in the variation law for the parameter b_4 , depending on the way in which the change in the lattice parameter is realized.

The authors thank S. A. AL'TSHULER and B. Z. MALKIN for discussing the results of the work, L. D. LIVANOVA and M. S. ORLOV for providing quality samples, and YU. A. TIMOFEYEV for frequent advice and assistance in the work.

2/2

- 99 -

Electrochemistry

USSR

UDC 541.67:537.311.33

KORSHAK, V. V., KHRENKOVA, T. M., SILING, S. A., ~~CHURANOVA, M. A.~~,
VINOGRADOVA, S. V., and KASATOCHKIN, V. I.

"Structure and Properties of Polymeric Semiconductors Based on Pyrromellitic Acid Tetranitrile and p-Phenylenediamine"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 14, Series A, No 3, 1972,
pp 701-705

Abstract: The heating of a polymer based on pyrromellitic acid tetranitrile and p-phenylenediamine (polyhexazocyclane PF) from 20 to 300, 400, 500, 600, 700, 800, and 900° at 5×10^{-3} torr, yielded polymers with specific resistance ρ_{spec} from 10^{13} to 5×10^{-1} ohm cm and activation energy of conductivity ΔE from 1.7 to 0.1 ev, depending on the heat treatment. The structure of the polymers was determined by X-ray diffraction analyses, nmr studies, and IR spectroscopy. At heat-treatment temperatures above 500°C the polymer undergoes degradation and cross-linking accompanied by the formation of bundles of aromatic layers consisting mainly of condensed aromatic compounds.

1/1

Miscellaneous

USSR

UDC 661.666:541.7

KASATOCHKIN, V. I., KAZAKOV, M. Ye., SAVRANSKIY, V. V., NABATNIKOV, A. P.,
and RADIMOV, N. P., Institute of Fossil Fuels, Moscow

"Synthesis of New Allotropic Forms of Carbon From Graphite"

Moscow, Doklady Akademii Nauk USSR, Vol 201, No 5, 1971, pp 1104-1105

Abstract: During the exposure of pyrographite platelet to a laser beam intense evaporation and melting of carbon with the formation of craters at the point of decreasing rays was observed. The results of studies on the nature of the carbon condensed from carbon vapors are given. The carbon vaporizing from the platelets of carbon was precipitated as a silvery-white layer surrounding a thin layer of black carbon precipitate. In the experiments a heterogeneous laser was used with impulse energies of 250 and 500 joules in a free generation with an impulse length 1×10^{-3} sec. The density of the silvery-white carbon was found to be 2.48 g/cm^3 . The specific electroconductivity of the carbon layer was about one ohm $\cdot \text{cm}^{-1}$. X-ray diffraction showed a polycrystalline structure for the silvery-white carbon film with an average crystal size of 10^{-5} cm. X-ray diffraction of the black carbon was characteristic of a highly dispersed material with an eroded diffraction zone. Comparison of interplanar distances for the precipitated carbon with
1/2

USSR

KASATOCHKIN, V. I., et al., Doklady Akademii Nauk USSR, Vol 201, No 5, 1971, pp 1104-1105

those of the cubic and hexagonal modifications of diamond and hexagonal and rhombohedral graphite showed that the silvery-white carbon obtained was a new allotropic crystalline form of carbon.

2/2

Acc. Nr.

APO049951

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code
UR 0467

104893w X-ray diffraction study of the effect of thermal treatment on the fine structure of pyrocarbon. Khomenko, A. A.; Kasatochkin, V. I.; Rolbin, Yu. A.; Smirnov, Yu. E. (USSR). *Zh. Fiz. Khim. Iverd. Topl.* 1970, (1), 118-13 (Russ). The pyrocarbon deposited at 2000° was ground (size of grains 40-100 μ) and heated in an Ar atm. at 2000-3000° at a rate of 40°/min. The samples heated at 2000-2600° were mixed with 40% Ni powder and those heated at 2700-3000° were mixed with 70% Ni powder for removing the effect of weak absorption of x-rays by pyrocarbon, i.e., considerable diffraction-lines broadening. A graphite mixed with 40 or 70% Ni powder was used as the std. The exptl. relation between the interplanar spacings and the sizes of space of coherent scattering of pyrocarbon, and temp. of treatment was detd. by method of harmonic anal. using 2 orders of reflection of one diffraction line. A Warren-Bodenstein formula was used for detn. the diams. of layers from a 2-dimensional zone (11) becoming a 3-dimensional line (110). The temp. relation of all these characteristics are given. Tadeusz J. Bartczak

1/4

REEL/FRAME
19801889

7nt

KASATSKIY, A.I.

UDC: 616.826.1-021.443

PROBLEMS AND PROSPECTS OF CONTROLLING MALARIA IN TROPICAL AFRICAN COUNTRIES

Article by A. I. Kasatskiy, E. I. Kozlov, and I. I. Kozlov, Moscow, Sovetskoye Zdravotnyye Delo, No 14, 1972, pp. 59-62, 13 June 1972.

At the present time, when malaria has been eradicated from all European countries and more than half of the entire population of Asian and American countries live in areas that have been totally or partially freed of this ailment, in the countries of tropical Africa, as in some other parts of the world, the disease has become a serious problem. In the case of many countries here, virtually the entire population suffers from malaria, and 500,000 children up to five years of age die every year.

The reasons for the serious lag of African countries with respect to control of malaria, in relation to other parts of the world are complex and diverse. They are related first of all to the recent history of these countries, as indicated by the very history of the control of this disease over the vast territories of the African continent.

We can distinguish three periods in the history of malaria and its control in tropical Africa. The first period goes from the start of the 19th Century to the end of the 1940s. Its typical distinction was that malaria control measures were performed only among colonial troops and the colonial administration. The latter measures in this period were performed among the local population in the 1930s-1940s, which were motivated usually by strategic or economic considerations. The total population of tropical Africa was virtually without any medical care.

The second period, which is referable to the 1950s, was a period of national liberation movements. It coincided with the upsurge of the national liberation movement and the start of disintegration of the colonial system on the African continent, and it was characterized by the fact that large-scale

The data were reported to the Fifth International Congress on Malaria Medicine (10-15 May 1972, Bulgaria).

JRS 55/17
31 Jan 73

Acc. Nr: AP0049043

K

Ref. Code: UR0357

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / ,
PP / 3-17

7. EFFECT OF GLUCOCORTICOIDS ON THE EYE TISSUE
MUCOPOLYSACCHARIDES IN RABBITS AND THE STATE
OF THE OPHTHALMOTONE REGULATION

B. S. Kasavina, V. M. Pantiyeleva, A. M. Shapkina

Summary

Glucocorticosteroids (cortisone, hydrocortisone) were found to exercise different influence on the content and composition of mucopolysaccharides in the ocular humors and tissues, depending upon the kind, dosage and timing of the hormones administration. The earliest and most pronounced changes are shown to occur in the aqueous

1/2

REEL/FRAME
19800828

2

AP0049043

humor, vitreous body, cornea and the crystalline lens. In the ciliary body and sclera modifications are observed to take place after a long-term introduction of the hormones. Deep changes in the trophicity of the eye tissues stemming from protracted administration of steroid hormones are revealed. Such changes in the ciliary body and filtration zone of the anterior chamber angle are attended by shifts in the intraocular pressure. Tests involving long-term introduction of glucosteroids ascertained the presence of direct relationship between the content and composition of mucopolysaccharides, on the one hand, and the hydrodynamics and ophthalmotone regulation, on the other. The present research explains one of the possible causes accounting for complications which supervene after prolonged use of steroid hormones in large doses.

JK

tdh

19800829

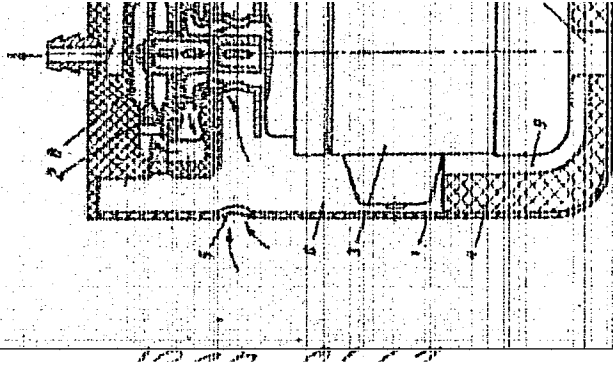
3 and the additional ports
are drilled on the potoon circumference for water
inlet into the potoon space 6. In the potoon body,
which serves in the same time as pump casing,
canal 7 and cavity 8 are formed for the impeller.
Grooves (canals) 9 and orifice 10, are used for
priming.

30.3.67 as 1145191/25-8. J. YA. KASCHIKOV et al.
ELEKTRIFIKATSIA SEL'SKOVO KHAZAYSTVA INEST. (2), 8.68
Bul 16/7.5.68. Class: 59b, Int. Cl. F 05c.

AA9028484

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-1969



"APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002201220013-8

AA9028484

APPROVED FOR RELEASE: 07/20/2001

CIA-RDP86-00513R002201220013-8"

USSR

UDC 532.517.4

KASHAFUTDINOV, S. T. and POLYAKOV, N. F.

"A Weak Turbulent Jet in Transverse Flow"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, Issue 1, No 3, 1973, pp 74-80

Abstract: Although a large number of studies have been made in the theory of turbulent jets, very little information has been obtained on the discharge of a jet into a transverse subsonic flow. The present study was made in order to measure turbulence and mean velocities in a number of jet cross-sections whose nominal parameters are those of unperturbed transverse flow, and to determine the distribution of pressures on the surface around the nozzle and the cross-sectional spectra.

The observations were made with use of a wind tunnel with open working portion having an elliptical cross-section of 2.33 x 4.00 x 4.00 m. The conclusions reached were as follows:

- 1) Turbulence is unevenly distributed in the jet: on the windward side it amounts to 0.3-0.5%, on the leeward side to a figure two orders higher; 2) 1/2

USSR

KASHAFUTDINOV, S. T. and POLYAKOV, N. F., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, Issue 1, No 3, 1973, pp 74-80

the windward portion of the jet experiences flow-around in a manner analogous to that of the frontal portion of a solid body, with a region of velocity reduction being formed; 3) in the leeward portion, as a result of spatial shift of velocities on the lateral jet boundaries, there are formed two oppositely-rotating vortexes; these appear at the outlet of the nozzle in a region of significant rarefaction; 4) discharge through the nozzle is uneven. In the windward portion, on account of retardation it is reduced; in two sections of the leeward portion, under the effect of rarefaction in the vortexes it is increased by 3-4% in comparison with discharge from a quiet medium; 5) regions of the leeward portion of the jet, corresponding to maximal discharge rate, have high ejective capability, and create the greatest rarefactions on the surface from which the jet flows; and 6) on account of increased turbulence in the vortexes and the medium, there is a conjunction of air from the transverse flow with the jet; owing to intensive dissipation of energy in the vortexes, pressure in the medium is lowered, despite velocity retardation.

2/2

- 12 -

USSR

UDC: 532.517.4

KASHAFUTDINOV, S. T.

"Concerning the Particulars of Turbulent Mixing of a Circular Jet With a Transverse Incompressible Flow"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, vyp. 3, No 13(193), Oct 71, pp 14-21

Abstract: In an attempt to gain insight into the interaction between a jet and a transverse flow, experiments are conducted on the degree of turbulent mixing between an air stream and an air jet. The results of these experiments are compared with experiments on the distribution of pressures over the plane from which the jet issues. It was found that the degree of turbulent mixing increases as the relative momentum of the jet decreases. However, the suction force of the jet with respect to the oncoming flow decreases in spite of the increase in the degree of mixing. Interaction between a jet with low relative momentum and a transverse flow takes the form of displacement of the transverse flow despite the appreciable increase in the degree of turbulent mixing as compared with "strong" jets.

1/1

- 24 -

USSR

KASHAFUTDINOV, S. T.

"Pressure Disturbances on a Flat Surface, Caused by the Escape of a Gas Jet Out of it Into a Subsonic Deflecting Stream"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 8, Jun 71, pp 26-32

Abstract: A very important problem for designing jet aircraft, particularly VTOL aircraft, is that of secondary forces (the primary force is considered to be the nozzle thrust) applied to the surface around the nozzle and caused by the interaction of the jet and deflecting stream. This is dealt with in the present work. Experimental data are obtained concerning the particularities of pressure distribution over a surface when an air jet escapes from it into a deflecting air stream. Variation of the relationship of the velocities to the deflecting stream within wide limits made it possible to ascertain a difference between the interaction of a weak jet and a strong jet with the stream. Also shown is the influence of jet turbulence upon the nature of its interaction with the deflecting stream. It is shown that high jet turbulence and the intensification of suction toward the stream exerts an influence

1/2

USSR

KASHAFUTDINOV, S. T., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR,
Seriya Tekhnicheskikh Nauk, No 8, Jun 71, pp 26-32

upon the pressure distribution around the nozzle, similar to the introduction
of a supplementary sink, namely decrease upstream pressure and a pressure
increase downstream. One table, nine figures, 8 references.

2/2

- 3 -

USSR

UDC 576.351.49 (Bact. typhi).083.35:663.14:636.087.24

~~KASHANOVA, N. I.~~, NUSINOV, A. E., BENDAS, L. G., and ZHARIKHINA, M. A., Moscow
Municipal Sanitary-Epidemiological Station and Moscow Pilot Plant for Enzyme
Preparations

"Use of a Fungus Hydrolysate from Nutrient Yeasts as the Base of a Nutrient
Medium for Phage Typing of Salmonella typhi"

Moscow, Laboratornoye Delo, No 9, 1971, pp 553-555

Abstract: A nutrient medium derived from yeast hydrolysate is a quick and
inexpensive way of phage typing the agent of typhoid fever. The medium con-
sists of the hydrolysate diluted with water (1:5), sodium chloride, and agar.
Two drops of Vi-I phage are added to a test tube with the hydrolysate after
it is inoculated with S. typhi at the rate of 50 million cells in 1 ml of
medium. Complete lysis occurs within 5 hours. The suitability of the yeast
hydrolysate for typing S. typhi was successfully tested on 100 cultures iso-
lated from bacteria carriers and typhoid patients.

1/1

KASHARSKIY, Ye. G.

FEASIBILITY OF GENERATING MEGAGAUSS
MAGNETIC FIELDS USING HIGH-PRESSURE
COMPRESSED GAS LININGS

JPRS 59459
9 JULY 1973

Article by Ye. G. Kasharskiy, A. A. Vasilikhov, A. A. Bogdanov, V. S. Galkovskiy, Ye. G. Kasharskiy, A. A. Kiselev, F. G. Rubtsov, V. I. Chernikov, Leningrad, Zhurnal Tekhnicheskoy Fiziki, Russian, Vol 45, No 2, 1973, signed to press 8 June 1971, pp 430-438

The results of calculation of a setup, designed for generating a megagauss pulse magnetic field in a large volume, are presented in this article. The magnetic field is amplified by compression in a cylindrical metal core, pushed by high-pressure gas (1,000-2,000 atm). The expected energy in the compressed magnetic field is several MJ and the lifetime of the field is of the order of 10 μ sec. In contrast to apparatus using explosives, the examined device is nondestructive; in contrast to devices used for compressing a shell with the energy of an electromagnetic field, the examined system does not experience the problems of super-power storage units and electromagnetic energy converters.

Introduction

Pulsed megagauss fields, especially in a large volume and with high (-1 MJ and above) energies, are very important in modern industry. They may be used for solving the problem of controlled thermonuclear synthesis [1], investigating matter at superhigh pressures [2], generating a pulse of electromagnetic energy at high power and energies (10^6 - 10^8 W, 10^4 - 10^6 J). The literature contains the results of analysis [3] of the megagauss fields by collapsing a metal case using explosives [3] or the energy of a capacitor bank [4-6]. The use of explosives is technologically difficult and leads to total destruction of the system; the use of capacitor banks is limited for practical purposes to the energy level of 10^4 - 10^6 J.

The use of the energy of compressed gas for collapsing a cylindrical metal shell (liner), amplifying a magnetic field by "adiabatic" compression

by the conducting cylinder, the geometries of which are parallel to the magnetic force lines, is considered promising. The advantages of this method are: 1) the system is nondestructive; the mechanical requirements on strength are the same as in the case of the apparatus that uses electromagnetic energy, since the magnetic pressure that collapses the liner must have the same magnitude ($1.0 \times 10^8 - 2.0 \times 10^9$ atm); 2) rapid application of external pressure on the liner. In the examined system does not require the development of high-power commutating systems; the electromagnetic self-up require presently unavailable) storage units and electromagnetic energy commutators ($10^8 - 10^9$ J, $10^4 - 10^5$ A); explosive systems require synchronous actuation of the detonators; 3) the use of compressed gas makes it possible to attain more efficient transmission of energy to the field in comparison with explosives and current inductive storage systems.

The most important part of the pneumatic apparatus is the system for breaking a cylindrical diaphragm that holds back all the gas pressure (by means of a cylindrical support F-11). Our apparatus incorporates a high-speed magnetic "therm-pinch" type coil (7), which generates the pulse that releases magnetic pressure.

In contrast to electromagnetic systems, the rate of collapse of the liner in a pneumatic system is limited to the speed of sound in gas. When hydrogen is used at room temperature a radial liner velocity of 10^3 cm/sec is completely feasible and is attainable for most applications. Thus, in the case of thermonuclear experiments (compression of deuterium plasma in a magnetic field), the characteristic time of adiabatic compression is determined by a velocity of $\sim 10^7$ cm/sec, which, finally, requires a very long magnetic field [8].

3). Description of Apparatus

The apparatus for storing and converting energy (Figure 1) consists of steel body 5, which houses support grate 3 and steel diaphragm 2, installed on it. In the cavity between the diaphragm and the body is gas (H_2 or He) under a pressure of 1,000-2,000 atm.

The diaphragm is a thin-wall steel cylinder with a wall thickness of the order of 1 mm, which is necessitated by the need for rapid and synchronous opening of all parts of the diaphragm (32).

Magnetic diaphragm rupture system 4 consists of six turns (33), wound on inductors. The design of the elements of the magnetic system is illustrated in Figure 2.

The diaphragm rupture system is powered by pulsed capacitors through coaxial sealed cables 6, insulated for 50 kV. Inside the support grate, at a distance of 1-2 mm from its inner surface, is copper liner 1, 140 mm in diameter with a wall thickness of 1-2 mm. An initial magnetic field ($H_{in} = 1.2 \cdot 10^8$ G) is developed beforehand in the cavity of the liner.

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COPOLYMERIZATION OF N VINYLPIRROLIDONE IN A CARBOXYLIC ACID MEDIUM
-U-
AUTHOR--(03)-SEMCHIKOV, YU.D., RYABOV, A.V., KASHAYEVA, V.N.
COUNTRY OF INFO--USSR
SOURCE--VYSOKO MOL. SOEDIN., SER. B 1970, 12(5), 381-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPOLYMERIZATION, STYRENE, HYDROGEN BONDING, CHEMICAL REACTION
RATE, CARBOXYLIC ACID, CHLORINATED ORGANIC COMPOUND, PYRROLIDONE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1231 STEP NO--UR/0460/70/012/005/0381/0384
CIRC ACCESSION NO--AP0134905
UNCLASSIFIED

K

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMER OF N-VINYLCARBONYLPYRROLIDONE (I) WITH H SUB2 C:CHCL, H SUB2 C:CHOAC, OR STYRENE IN HOAC OR CHCH SUB2 CO SUB2 H SOLNS. WAS CARRIED OUT. THE REACTIVITY RATIOS, POLARITY FACTORS, AND SP. ACTIVITY FACTORS WERE DETD. THE CHANGES OF THESE PARAMETERS ARE DUE TO H BONDING BETWEEN I AND THE ACIDS. IR SPECTROSCOPY SHOWS THAT THE H BONDS INVOLVE THE CO GROUP OF I. HOAC CONSIDERABLY INCREASES THE POLYMERIZATION RATE OF I. FACILITY: NAUCH.-ISSLED. INST. KHIM., GORKI, USSR.

UNCLASSIFIED

USSR

PLINER, P. G., PETRUSHKIN, P. S., and KASHCHEGULOV, M. D., Anesthesiology
Department, Pavlodar Oblast Hospital

"Chlorophos Poisoning"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 8, 1971, pp 75-76

Abstract: A 32-year-old female was brought to the hospital unconscious 1 1/2 hours after drinking 5 grams of the organophosphorus insecticide chlorophos (Dipterex). Emergency tracheal intubation, artificial respiration, gastric lavage, intravenous injections of calcium chloride, cocarboxylase, prednisolone, and so forth failed to restore natural breathing. Direct blood transfusions and repeated injections of ATP were ineffectual and artificial ventilation with a respirator, injections of atropine, glucose, and vitamins were required before the patient regained consciousness (16 hours after admission to the hospital). Acute chlorophos poisoning is becoming increasingly common. Victims should be brought to a resuscitation center or to a surgical hospital with a resuscitation department and treated by a team headed by an anesthesiologist and a specialist in resuscitation techniques.

1/1

Acc. Nr: ~~AP0043267~~

KASHCHEY V.A.

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, PP 778-785

THIN SUPERCONDUCTING FILMS IN A UHF FIELD.

II. NONLINEAR PROPERTIES OF THIN SUPERCONDUCTING FILMS IN A UHF FIELD

Yeru, I. I.; Kashchey, V. A.; Paskovatskiy, S. A.

The nonlinear properties of thin ($d < \lambda_L(0)$, $d < \xi_0$) lead, tin and indium superconducting films in a UHF field (10^{10} Hz) are investigated experimentally at temperatures between 1.5 and 4.2° K. The results which can be explained by excitation of Cooper pairs via the energy gap by an UHF current, agree well with the pair excitation mechanism considered in the first part of the paper [1], despite the fact that the results were obtained with films possessing a nonuniform current distribution along the film length. The results also indicate a new possibility of observing the behavior of the principal superconductor parameters and measuring their relaxation rate.

1/1

REEL/FRAME
19770174

21 bdk

USSR

UDC 621.396.967

KASHCHEYEV, B. I., DELOV, I. A., DUBNIK, B. S., TKACHUK, A. A.

"A Radar Set for Studying Faint Meteors"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 16, pp 11-18 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11645)

Translation: The paper describes a set of radar equipment with the capacity for registering reflections from meteor trails with a linear electron density down to 10^{11} electrons/meter. The equipment has been successfully used for a period of three years. A schematic diagram is given as well as specimens of photographic registrations. Two illustrations, bibliography of eight titles. Resumé.

1/1

= 60 =

Refractory Materials

USSR

UDC: 666.764.13:66.063.5

KASHCHEYEV, I. D., BABKIN, V. G., MAMYKIN, P. S. and TSAREVSKIY, B. V.,
Ural Polytechnic Institute imeni S. M. Kirov

"Kinetic Characteristics of Wetting and Impregnation of Magnesium Oxide
With Fayalite"

Moscow, Ogneupory, No 4, Apr 72, pp 45-48

Abstract: A study has been made of the effect of saturating electrically molten magnesium oxide with a soluble salt of chromium acetate (7.50 g per 1 liter H₂O) on the capillary impregnation rate and spreading of fayalite over the surface of MgO under isothermal conditions. With increasing temperature, the impregnation rate increases. In specimens treated with a chromium acetate solution the impregnation rate drops to one half of the initial rate. Applying a chromium salt film to electrically molten MgO plates reduces the initial spreading rate from 400 and 700 deg/sec to 95 and 180 deg/sec at 1250 and 1300°C, respectively. To determine the impregnation rate, use was made of a method in which the movement front of the impregnating liquid is continuously fixed by variations in the resistivity of the specimen. The wetting rate was evaluated by changes in the angle of flow of the drop in time. (4 illustrations, 12 bibliographic references)

1/1

USSR

KASHCHENEVSKIY, L. Ya., YAKOVER, I. M., Vil'nyus State University imeni
V. Kapsukas

"Fluctuations of Hot Photoelectrons in Semiconductors"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 8, Aug 72, pp 2256-2258

Abstract: The authors investigate fluctuations in the electric current of a semiconductor in which strongly nonequilibrium distribution of current carriers is created by external monochromatic radiation. The differential frequency conductivity of such a semiconductor is calculated, and it is shown that there is no universal relation between the spectral density of fluctuations in electric current and differential frequency conductivity analogous to the fluctuation-dissociation theorem.

1/1

USSR

UDC 681.178.9

KAShehEYeV, A. M., KISELEV, V. M., LETYaGIN, Yu. V., NOVIKOV, V. A.,
ROZANOV, Ye. V., ROZENKRANTs, Yu -K. V. and SHAPIRO, B. I.

"A Device for Recording Pulse Signals"

USSR Author's Certificate, Class G OI d 9/36, G O6 m 3/00, No 334478, filed
25 Dec 70, published 23 May 72 (from RZh-Avtomatika Telemechanika i Vychislitel'-
naya Tekhnika, No 3, Mar 73, Abstract No 3 A378 P)

Translation: A device is proposed for recording pulse signals, containing
"AND" circuits and an "OR" circuit, the latter attached to a decoder connected
with electromagnetic recording machines. To ensure a quantitative evaluation
of the information recorded over time, a reduction of deviations, and a simpli-
fication of service, the device contains a time code shaper connected directly
and through the control block to distributors attached to the numeric code
sensors, connected in turn to the corresponding AND circuits. The AND circuits
are connected to the OR circuit. The outputs of the time code shaper are con-
nected to the electromagnetic recording machines, and electromagnetic relays
are connected to a pulse group generator. One illustration.

1/1

- 6 -

USSR

UDC 546.791.4

KASHCHEYEV, I. N., and ZOLOTAREV, A. B.

"Reaction of Uranium With a Mixture of Lithium and Calcium Fluorides"

Leningrad, Radiokhimiya, Vol 15, No 6, 1973, pp 823-826

Abstract: It was established that under non-equilibrium conditions uranium can interact with molten alkali metal fluorides forming nonvolatile uranium fluoride and liberating alkali metals. In this process two layers are formed in the LiF-CaF₂ mixture: the lower layer containing considerable amount of uranium and the upper one with a low concentration of this metal. The investigation of the changes in concentration of uranium under such conditions, and their relative content with time showed that the limiting stage of this process is the diffusion of the reaction components towards the phase separation surface.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTERACTION OF URANIUM AND ITS ALLOYS WITH ALKALI METAL FLUORIDES
-U-
AUTHOR--(03)-NOVOSELOV, G.P., KASHCHEYEV, I.N., DOGAYEV, YU.D.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(1), 48
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--URANIUM, CHEMICAL REACTION RATE, NICKEL, IRON, CALCIUM
FLUORIDE, URANIUM COMPOUND, LITHIUM FLUORIDE, POTASSIUM COMPOUND, SODIUM
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0487 STEP NO--UR/0089/70/028/001/0048/0048
CIRC ACCESSION NO--AP0121161
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--A0121161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT LESS THAN 1723DEGREESK, THE REACTION BETWEEN METALLIC U AND MOLTEN CAF SUB2 IS NEGLIGIBLE, AND CAF SUB2 MAY BE USED AS AN INERT SOLVENT FOR ALKALI METAL FLUORIDES IN THE CONVERSION OF U TO UF SUB4 BY REACTION WITH SUCH FLUORIDES. THUS, AT 1523DEGREESK, THE REACTION RATE BETWEEN U AND SUCH FLUORIDES INCREASES SHARPLY WITH INCREASING ALKALI METAL FLUORIDE CONC. C IN THE CAF SUB2, AND IN THE CASE OF C EQUALS 50 WT.PERCENT, THE RATE OF CONVERSION OF THE U IN LIF, NAF, AND KF SOLNS. IS 4 TIMES 10 NEGATIVE PRIME2, 6 TIMES 10 NEGATIVE PRIME2, AND 12 TIMES 20 NEGATIVE PRIME2 G-(CM PRIME2 MIN), RESP. THE REACTION BETWEEN SUCH FLUORIDE SOLNS. AND METALLIC NI OR FE IS NEGLIGIBLE.

UNCLASSIFIED

USSR

UDC: 537.29:669.01

DAVYDOV, A. D., KASHCHEYEV, V. D., MIRZOYEV, R. A., Moscow

"Anodic Dissolution of Iron- and Nickel-Based Alloys in the Process of Electrochemical Dimensional Working in Sodium Chloride Solutions"

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of Materials Processing], No 6, Nov-Dec 73, pp 32-36.

Abstract: Anodic polarization curves are produced for a number of alloys based on iron and nickel in sodium chloride solutions up to current densities of $50\text{a}/\text{cm}^2$. The electrode potentials in the current density interval studied do not exceed + 3.2 v. The heat treatment mode of the alloys may have a significant influence on their anodic behavior. The anodic dissolution of iron- and nickel-based alloys in sodium chloride solutions may vary in nature as a function of electrode potential. Accordingly, the polarization curve generally has several sections. The local value of potential on the surface of the part being worked depends significantly on the hydrodynamic conditions in the interelectrode gap. Upon transition from activated dissolution of the electrode to dissolution in the state of transpassivation, the external

1/2

- 79 -

USSR

Davydov, A. D., Kashcheyev, V. D., Mirzoyev, R. A., Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 73, pp 32-36.

appearance and smoothness of the anode surface change and the yield per current may drop. Anodic dissolution of alloys in the transpassive state may occur quite rapidly.

2/2

USSR

UDC: 620.193.01:669.725

DAVYDOV, A. D., KASHCHEYEV, V. D., KOZLOV, M. V.

"Influence of Anions in Electrolyte on Anodic Dissolution of Beryllium"

Moscow, Zashchita Metallov, Vol 9, No 4, Jul-Aug 73, p 436.

Translation: The authors produced anodic potentiodynamic (2 v/min) polarization curves on a rotating (5000 rpm) beryllium disc electrode. After the potential corresponding to the anion present is reached, the rate of dissolution of the metal increases rapidly. In hydrochloric and particularly sulfuric acid, anodic dissolution of beryllium begins at less positive potentials than in the corresponding salts, apparently a result of the dissolution of the oxide film. The yield per current with anodic dissolution of beryllium also depends on the nature of the anions present in the electrolyte and generally exceeds 100% as Be^{2+} .

1/1

- 19 -

Electrochemistry

USSR

UDC 621.357.035.4:621.79.027(068.8)

DAVYDOV, A. D., KAMKIN, A. N., KASHCHEYEV, V. D., MITYASHEKIN, D. Z., KLOPOVA, S. V.

"Electrolyte for Electrochemical Machining of Niobium and Its Alloys"

USSR Author's Certificate No 315558, filed 13 Apr 70, published 30 Nov 71 (from BZh-Khimiya, No 12, Jun 72, Abstract No 12L311P)

Translation: An electrolyte has been patented for electrochemical machining of Nb and its alloys. It is distinguished by the fact that in order to increase the process stability and the quality of the surface subjected to anodic solution, a bromide salt, for example, NaBr, a nitrate salt, for example, NaNO_3 , a base, for example, NaOH, H_3BO_3 and water are introduced into its composition. The components are taken in the following proportions (in % by weight): bromide salt 30-50, nitrate salt 0.5-2, alkali 0.5-2, H_3BO_3 3, the rest water.

The proposed electrolyte has been tested on an experimental setup. Flat specimens produced by turning with an area of 8 cm^2 and a class 4-5 surface finish were machined. The machining was carried out in a solution of the following composition (% by weight), KBr 45, NaNO_3 1, KOH 1. The electrode gap is maintained within the limits of 0.3 mm, and the electrolyte pressure at the intake to the operating gap is 8 kg/cm^2 . When applying a voltage of 6 volts to the

1/2

USSR

DAVYDOV, A. D., et al., USSR Author's Certificate No 315558, filed 13 Apr 70, published 30 Nov 71

system, destruction of the film of Nb pentoxide takes place, and the current strength increases sharply. The rate of anodic solution increases linearly with an increase in D_a . The BT_a is ~70%. The electrolyte temperature is kept within the limits $20 \pm 3^\circ$ by means of a special refrigerating unit. After machining, a smooth light surface with 6-7 class finish was obtained. After passage of 10 a/hour, the pH of the electrolyte decreases from 13 to 9, and the machining quality becomes worse. This can be eliminated by adjusting the electrolyte with alkali, but it is expedient to introduce 3% boric acid into the composition which has a buffering effect and to increase the alkali content to 2% in order not to lower the initial pH value.

2/2

- 5 -

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF ELECTROLYTE PH ON THE ANODIC DISSOLUTION OF IRON DURING
ELECTROCHEMICAL TREATMENT -U-
AUTHOR--(03)-DAVYDOV, A.D., KABANOV, B.N., KASHCHEEV, V.D.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (1), 48-51
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ELECTROCHEMISTRY, ELECTROCHEMICAL MACHINING, METAL
PASSIVATION, IRON ALLOY, ELECTROLYTE, ANODIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0134 STEP NO--UR/0472/70/000/001/0048/0051
CIRC ACCESSION NO--AP0054930
UNCLASSIFIED

K

2/2 023

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054930

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF PH ON THE ANODIC DISSOLN. OF ARMCO FE IN BUFFERED 4.5 NA CL SOLN. WAS STUDIED BY POTENTIOSTATIC POLARIZATION CURVES AT A ROTATING DISK ELECTRODE (5000 RPM). THE POTENTIAL WAS VAIED AT A RATE EQUALS 2 V-MIN. AT PH VALUES GREATER THAN 8, PASSIVATION OCCURRED AT A VOLTAGE SIMILAR TO 0.8 RELATIVE TO THE STD. H ELECTROD AND PRACTICALLY STOPPED AN FURTHER ELECTROCHEN. MACHINING. PASSIVATION WAS DUE TO FILM FORMATION.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--POSSIBLE INTENSIFICATION OF THE CHROMIUM PLATING PROCESS -U-
AUTHOR--(03)-DAVYDOV, A.D., RYABOV, A.YA., KASHCHEYEV, V.D.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKIMIYA 1970, 6-(2), 292
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRODE, ADHESION, METAL, CHROMIUM PLATING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1397 STEP NO--UR/0364/70/006/002/0292/0292
CIRC ACCESSION NO--AP0107870
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0107870

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF INTENSIFYING THE CATHODIC DEPOSITION OF CR ON A SMOOTH STEEL ELECTRODE WAS STUDIED BY USING A COLD ELECTROLYTE OF THE COMPN. (G-1.): CR0 SUB3 400, H SUB2 SO SUB4 3, NAOH 60, SUGAR 2. WITH INCREASING C.D. THE CURRENT EFFICIENCY INCREASES LINEARLY BETWEEN 0.1 AND 4.5 A-CM PRIME2. WITH INCREASING C.D. THE HARDNESS OF THE CR DEPOSITS INCREASES. AT HIGH C.D. A REVOLVING DISK ELECTRODE WAS USED WITH OHMIC POTENTIAL DROP BETWEEN THE STUDIED ELECTRODE AND THE REF. ELECTRODE. UNDER POTENTIOSTATIC CONDITIONS AT MINUS 1.2 V A DENSE CR DEPOSIT WITH GOOD ADHESION TO STEEL WAS FORMED. THE CURRENT EFFICIENCY EXCEEDS 60PERCENT. THE MICROHARDNESS IS 1100 KG-MM PRIME2. WITH A FAST ELECTROLYTE FLOW THROUGH A NARROW GAP BETWEEN THE ELECTRODES THE OUTPUT OF THE PROCESS CAN BE CONSIDERABLY INCREASED. THIS IS IMPORTANT FOR THE APPLICATION OF THICK DEPOSITS OF SOLID CR, E.G. IN THE REPAIR OF WORN OUT PARTS. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.2:53.145:538.0

KASHCHEYEV, V. N., Institute of Physics, Academy of Sciences of the Latvian SSR

"Spin Diffusion in a Uniaxial Ferromagnetic. II. Correlation Functions"

Riga, IAN LatvSSR, Serija Fizicheskikh i Tekhnicheskikh Nauk, No 4, 1971, pp 13-19

Abstract: In the first paper of this series (not yet published at the time of this writing) the author calculated several terms of the expansion of thermodynamic quantities for a universal Heisenberg ferromagnetic in a power series with respect to inverse temperature. In this article, he uses the same model to find the static and time-dependent paired spin correlation functions, also in the form of a series with respect to powers of a small parameter. In the case of time-dependent correlation functions, both long and short times are considered with and without anisotropy. The notation used in the formulas is taken from the first paper of the series. Bibliography of seven titles.

1/1

- 76 -

Stress, Strain, and Deformation

USSR

UDC 620.178.14

KASHCHEVY V. N. and MOKIN, A. M., Siberian Physico-Technical Institute
imeni V. D. Kuznetsov at Tomsk University

"The Mechanism for Onset of a Crack on the Surface of a Plastic Metal"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 95-101

Abstract: A scratching cone may be studied as a cutting tool having a negative forward angle. The emergence of the conical indenter toward the surface of the metal during scratching at a constant normal load may be due to the hardening of the deformed metal and the onset of the force of friction having a component that is directed counter to the vertical force of the normal load. The authors state that allowing for the forces of friction which act on the indenter as a result of the flow of metal to the loading and chipping in the direction from down upward may formally explain the slight emergence of the point of the indenter toward the surface of the scratched metal. The decrease in the support area is compensated by hardening of the metal as a result of plastic deformation and the existence of a certain component of the force of friction which is directed upward along the axis of the cone. The tendency of the cone to leave the metal to the surface in the presence of a tangential motive force is due to the same cause as the onset of radial compressive

1/2

USSR

KASHCHEYEV, V. N. and MOKIN, A. M., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 95-101

forces of cutting for cutting tools having negative forward angles of cutting rigidly affixed in the force-measuring device on the support of the machinery. The article contains 4 illustrations and 16 bibliographic entries.

2/2