2/2 048 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF SHORT CONJUGATED SEGMENTS INCREASED DURING THE OXIDATIVE THERMAL DEGRADATION OF TITLE POLYMER (I) AT 175DEGREES. THE DISTRIBUTION AND CONTENT OF POLYENE SEQUENCES IN I DEGRADED IN THE AIR AND STABILIZED WITH PBO.PBSO SO84, OR ANTIOXIDANTS (E.G., 4,METHYL,2,6,DI,TERT,BUTYLPHENOL, BIS,(5,METHYL,3,TERT,BUTYL, 2,HYDROXYPHENYL)METHANE, OR BISRENE, AND POLYCARBONATES, WERE STUDIED. THE RELATION OF MICROCRACKS TO THE POLYMER MICROSTRUCTURE AND THE LASER IRRADN. INDUCED DEVELOPMENT OF DESTRUCTIVE CRACKS FROM THE MICROCRACKS ARE DISCUSSED.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--KINETICS OF AUTOCATALYTIC DEHYDROCHLORINATION OF POLYVINYL CHLORIDE -U-

AUTHOR-(03)-MINSKER, K.S., MALINSKAYA, V.P., PANASENKO, A.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1151-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MATHEMATIC EXPRESSION, CHEMICAL REACTION KINETICS, POLYVINYL CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1249 STEP NO--UR/0459/70/012/005/1151/1154

CIRC ACCESSION NO--AP0134923

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134923

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION OBEYS THE EQUATION CHI EQUALS KAPPA SUBO-KAPPA(EXP(KAPPAALPHA TAU) MINUS 1), WHERE KAPPA SUBO AND KAPPA ARE RESP. THE RATE CONSTS. OF THE NONCATALYTIC AND AUTOCATALYTIC REACTIONS, CHI IS THE AMT. OF HCL EVOLVED DURING TIME TAU, AND ALPHA SUBO IS THE AMT. OF HCL IN THE POLYMER PRIOR TO THE REACTION. KAPPA AT 176DEGREES EQUALS KAPPA SUBO TIMES 10 PRIMES AND DEPENDS ON THE EQUIL., HCL (COMBINED) YIELDS AND IS FORMS AND IS FORMED FROM HCL(G).

FACILITY: BASHKIR. GOS. UNIV., UFA, USSR.

UNCLASSIFIED

USSR

UDC 616.992.282-036.1(47)

ARIYEVICH, A. M., Professor, MINSKER, O. B., Candidate of Medical Sciences, and PINZUR, G. S., Department of Systemic Mycoses, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Moscow

"Clinical Aspects of Coccidioidomycosis in the USSR"

Moscow, Sovetskaya Meditsina, No 6, Jun 71, pp 24-29

Abstract: Since 1951 more than 120 cases of coccidioidomycosis have been recorded in the USSR. Some of them originated in northern regions. During 1966-70, 61 patients with coccidioidomycosis were observed at the authors' institute, among them 44 men and 17 women. The duration of the infection with Coccidioides immitis was 5-25 yrs or longer. Constant contact with the soil was established in only 36 cases, but occasional contact that resulted in infection could be assumed in the remaining cases. There were two cases of residual pulmonary coccidioidomycosis and 59 cases of the disseminated (systemic) form of the disease. In 48 cases the subcutaneous cellular tissue and the skin were predominantly affected, while 12 patients coccidioidomycosis of the lungs. X-ray examinations disclosed remainders of the primary pulmonary infection in 28 of the group of 48 patients. In 23 cases coccidioidomycosis was combined with actinomycosis. In the treatment of the patients an anti-

1/2

USSR

ARIYEVICH, A. M., et al., Sovetskaya Meditsina, Vol 34, No 6, Jun 71, pp 24-29

bacterial antibiotic was applied for 7-10 days, which was selected depending on the bacterial flora presnet. This was followed by alternating administration of sulfadimezin and nystatin. In cases in which actinomycosis was present, injections of actinolysate were carried out. Vitamins were administered and, if necessary, drugs with antihistamine activity. In severe cases blood transfusions were carried out. During the past two years, surgery was applied to an increasing extent. Intravenous drop-bydrop infusions of the antifungus antibiotic amphoterecin B proved to be of advantage.

2/2

4

USSR UDC 911.3.616.928.6(47+57)

ARIYEVICH, A. M., STEPANISHCHEVA, Z. G., LYSENKO, A. Ya., MALKINA, A. Ya., AGARUNOVA, Yu. S., DARCHENKOVA, N. N., BARKOV, V. N., and MINSKER, O. B.

"Three-Year Study of Histoplasmosis in the USSR"

V. sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i trop. med. (Proceedings of the Scientific Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine -- collection of works), Moscow, 1970, pp 61-63 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.124)

Translation: A total of 31 cases of histoplasmosis were recorded in the USSR by the beginning of 1970. Of these, 24 were in Western Siberia. A total of 690 soil specimens were examined, gathered from sites where histoplasmosis was recorded (Tyumenskaya oblast, Turkmen SSR and others) and from sites having no cases (Armenian SSR and the environs of Moscow). The agent of histoplasmosis was isolated from soil of the Turkmen SSR. In one out of 50 house mice (in Turkmen SSR) signs were found of histoplasmosis. Skin tests (176 in Tyumen oblast and 591 in Turkmenia) were made yielding positive results in 2% and 5.6% of the cases studied, respectively.

1/1

USSR UDC: 668.3/.4

SEVERNYY, V. V., MINSKER, Ye. I., CHUKIN, V. S., KVASHOVSKAYA, K. V.

"Optical Elastic Adhesives Based on Low-Molecular Polyorganosiloxane Rubber Stocks"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 176-179

Abstract: The paper presents the results of research on the optical, physicomechanical and thermomechanical properties of elastic self-vulcanizing cold-setting "Elastosil" cements recommended for use in the optical systems of instruments (in Cerenkov and scintillation counters in particular) at working temperatures from -80 to +200°C.

1/1

USSR UDC: 621.396.6.017.72

SEVERNYY, V. V., UKLONSKIY, D. A., VARLAMOVA, N. V., MINSKER, Ye. I.

"Heat Conducting Organosilicon Materials"

Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry), Vyp. 10, Moscow, 1970, pp 39-40 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V320)

Translation: The overall thermal conductivity of a given device may drop appreciably as a result of an increase in contact thermal resistance when there are air gaps between contacting surfaces. These resistances are reduced by using heat conducting pastes, those with an organosilicon base in particular. Among these are thixotropic pastes designed merely for filling gaps and not for cementing, and pastes of the "Elastosil" type which harden after application and may also act as cements or sealants. Data on these pastes are given. Three tables. N. S.

1/1

USSR

MINSKIY, V. YA.

"Boundary Value Problems for a Nonhomogeneous Elliptic Differential Equation With Constant Coefficients in a Half-Space"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 27, No 3, May-Jun '72, pp 209-210

Abstract: The article considers the elliptic boundary value problem

$$(1)\qquad P\left(\frac{1}{i}\frac{\partial}{\partial x_1}, \ldots, \frac{1}{i}\frac{\partial}{\partial x_n}, \frac{1}{i}\frac{\partial}{\partial t}\right) u(x, t) = f(x, t) \qquad (t > 0),$$

$$(2)\qquad B_j\left(\frac{1}{i}\frac{\partial}{\partial x_1}, \ldots, \frac{1}{i}\frac{\partial}{\partial x_n}, \frac{1}{i}\frac{\partial}{\partial t}\right) u(x, t)\big|_{t=0} = g_j(x) \qquad (1 \leq j \leq m)$$

in the half-space

$$R_+^{n+1} = \{x_1, \ldots, x_n, t), t > 0\},$$

1/2

USSR

MINSKIY, V. YA., Uspekhi Matematicheskikh Nauk, Vol 27, No 3, May-Jun 72, pp 209-210

where $P(D_x, D_t)$ is a properly elliptic differential operator with constant coefficients of order $2m$ and $\{B_j(D_x, D_t)\}_{j=1}^{m}$ is a Schechter-normal system of boundary differential operators with constant coefficients. It is assumed that the symbol $P(\xi_1, \ldots, \xi_n, \tau)$ of operator $P(D_x, D_t)$ satisfies the following conditions:

a) at those points $(\xi, \tau) \in R^{n+1}$ at which

$$P(\xi_1, \ldots, \xi_n, \tau) = 0, \ \mathrm{grad}\, P(\xi_1, \ldots, \xi_n, \tau) \neq 0,$$

b) the total curvature of the surface $P(\xi_1, \ldots, \xi_n, \tau) = 0$ is positive at each point.

A theorem is formulated for the existence of a unique solution of problem (1), (2).

2/2

USSR

UDC 621.3.032.266.3

LEVIN, M. L., MINTs, A. L. - Academician, NAUMENKO, Ye. D. and FILIMONOVA, T. N., Council for Charged Particle Accelerators, Academy of Sciences of the USSR, Moscow

"Gyromagnetic Compression of Powerful, Relativistic, Dense Electron Beams of Tubular Form"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 5, 1973, pp 1085 - 1088

Abstract: Electron beams are used to transfer large amounts of energy to small objects in brief intervals of time. This makes it advantageous to compress them to maximum density, but the high charge of the electron in relation to its mass makes this difficult. The method described in this article for compressing segments of a tubular electron beam involves three steps: a) electron tubes are rearranged into rotating electron rings moving along an axis; b) the rings are subjected to radial compression in a spatially increasing, static magnetic field; c) the compressed rings are again reformed into sections of a tubular electron beam moving parallel to the axis, differing from the initial segments by their smaller dimensions and higher density. Step a uses an apparatus described by Levin, Mints, and Naumenko in Volume 204, No 4 of this journal. The same magnetic system can be used for operation c. The apparatus for step b is schematically diagrammed in the article.

As the rings are compressed, the energy of longitudinal motion is converted to rotary motion, which can bring the ring to a complete stop or even reflect it in the 1/2

USSR

LEVIN, M. L., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 5, 1973, pp 1085 - 1088

opposite longitudinal direction; additional energy must be supplied to overcome this. The electron rings also tend to elongate in the longitudinal direction, requiring further inputs to prevent this. Techniques for achieving these manipulations are described in the article. Typical values to be achieved by this installation include a compression of the ring from a radius of 20 cm to 4 cm, a longitudinal compression from 10 cm to 1 cm, an increase in the relativistic rotation factor from 6 to 30, etc. Calculation of these factors is based on an analysis given by Levin at the Symposium on Collective Acceleration Methods, Dubna, 27 - 30 September, 1972, Document OIYaI,D9-6707,49 (1972).

2/2

UDC 53.07/.08+53.001.5

USSR

MINTS, A. L.

"Work of the Radiotechnical Institute of the Academy of Sciences USSR on the Development of Proton Accelerators"

Tr. Radiotekhn. in-ta. AN SSSR (Works of the Radiotechnical Institute. Academy of Sciences USSR), 1970, No 1, pp 10-48 (from RZh-Fizika, No 1, Jan 71, Abstract No 1A382)

Translation: The work of the Radiotechnical Institute in the field of accelerators is described. The accelerating systems of the 680-Mev phasotron and the 10-Gev synchrophasetron, the accelerating systems and the systems for beam control and measuring its parameters on the 7- and 70-Gev proton synchrotrons are described briefly. A description is given of 25- and 100-Mev linear proton accelerators (injectors) and also of the design of a 1000-Gev cybernetic accelerator and its 1-Gev model in which protons have been accelerated to 700 Mev. V. P.

1/1

24

USSR

ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., RAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHASHVILI, K. Z., SHUKEYLO, I. A., BOYKO, S. N., KOMAR, YE. G., KALYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radio-electronic systems for acceleration process control and generation of

1/4

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

2/4

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

3/4

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

4/4

1

USSR UDC 669.14.018.44:534-8

PON'KIN, YU. F., VOLKOV, B. I., KUDRYAKOVA, L. P., MINTS, I. I., and KUZNETSOVA, G. V.

"Effect of Ultrasonic Vibrations on Mechanical Properties and Fine Structure of 12Kh1MF Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1971, pp 67-68

Abstract: A study was made of the aging of 12Kh1MF steel (0.11% C, 0.20% Si, 0.46% Mn, 1.12% Cr, 0.20% Ni, 0.27% Mo, 0.22% V) under the action of ultrasonic vibrations. Billets were normalized at 980° C and tempered at 740° C. Ultrasound-induced changes in properties were compared with changes in the same properties as a result of thermal aging without stress. A comparison was made of fine structure, short-time mechanical properties, the content of carbide-forming elements (chromium, molybdenum, vanadium) in the anode deposit and the time until failure

1/2

USSR

PON'KIN, YU. F., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1971, pp 67-68

at σ = 16 kg/mm^2 and 585°C. The results indicate that the processes occurring in 12KhlMF steel as a result of the action of 20 kHz ultrasonic vibrations correspond to the processes taking place during thermal aging without stress, but that they occur at a much more rapid rate. Ultrasonic vibrations with a certain peak pressure can be used for accelerated long-time strength testing of 12KhlMF-type steels.

2/2

USSR

UDC: 62-55

MINTS, M. Ya., SMELYAKOV, V. V., CHINKOV, V. N.

"Digital Analyzer of Frequency Characteristics"

USSR Author's Certificate No 281907, filed 16 Dec 68, published 11 Mar 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No. 12, 1971, Abstract No. 12A147P)

Translation: The invention is concerned with the area of frequency characteristics analysis for automatic control systems. Known frequency characteristic analyzers, containing sinusoidal signal oscillators, an analog-code converter, shapers, 2 multipliers, integrating counters, have high method errors when investigating nonlinear systems. The proposed device differs from these instruments in that the analog-code converter is connected to the input of both multipliers, the input of one converter is connected to the signal shaper output through an integrator, the input of the other converter is connected directly to the output of the shaper. Made in this way, the device yields greater accuracy in researching nonlinear systems. Resume

1/1

USSR

UDC: 621.317.757

MINTS, M. Ya., SMELYAKOV, V. V., CHINKOV, V. N.

"An Automatic Digital Machine for Checking Linear Two-Terminal Pair Networks"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317068, Division G, filed 13 Sep 68, published 7 Oct 71, p 175

Translation: This Author's Certificate introduces an automatic digital machine for checking linear two-terminal pair networks. The device contains a sinusoidal signal oscillator, a control module, an analog-code converter, multipliers, flip-flops, registration and integration counters, and AND circuits. As a distinguishing feature of the patent, the functional possibilities of the device are extended and speed is increased by adding a delay element and an input selector for constant coefficients. The control module is connected through the delay element to the input selector for constant coefficients which feeds one of the multipliers and the registration counter, as well as to the set inputs of the control flip-flops. The other inputs of these flip-flops are connected to the

1/2

USSR

MINTS, M. Ya., USSR Author's Certificate No 317068

AND circuits of the integration counters, and the output of one of the flip-flops is connected to the input selector for constant coefficients which feeds the other multiplier.

2/2

USSR
Automata

USSR

UDC 621.317.757

MINTS, M. YA., SMELYAKOV, V. V., and CHINKOV, V. N.

"A Digital Automation for Monitoring Linear Quadrupoles"

USSR Author's Certificate, Class G O s 15/46, No 317058, filed 13 Sep 68, published 22 Nov 71 (from RZh-Avtpmatika Telemechanika i Vychislitel'naya Tekhnika No 3, Mar 73, Abstract No 3 A 391)

Translation: A digital automaton is proposed for monitoring linear quadrupoles. It contains a sinusoidal oscillator, a control unit, an analog-code converter, multiplier devices, flip-flops, recording and integrating counters, and "AND" circuits. To extend the functional capabilities and improve the speed of the device, it includes a delay element and a constant coefficient input switch, with the control unit connected through the delay element to the constant coefficient input switch, one of the multiplier devices, and the recording counter, as well as with the setting inputs of the control flip-flops; the other inputs of the latter are connected to the AND gates of the integrating counters, while the output of one of the flip-flops is connected to the constant coefficient input switch in the other multiplier apparatus. One illustration.

1/1

USSR

UDC: 621.317.77

MINTS, M. Ya., KUCHERENKO, G. N.

"Analyzing the Effect of Nonlinear Distortions on the Accuracy of Determining Phase Shifts Between Fundamental Harmonics"

V sb. Vopr. uluchsheniya tekhn. parametrov vyprямit. i tranzist. priborov (Problems of Improving the Technical Parameters of Rectifiers and Transistorized Devices--collection of works) Leningrad, 1970, pp 364-368 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A349)

Translation: An analysis is conducted of the problem of maximum error in the determination of the phase shift between oscillations with harmonics. A condition is found which imposes a limit on the coefficient of nonlinear distortion: namely, that the determination of the phase shift at moments of transition through zero is unique only when it is realized. Bibliography of one. .. L.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ANOMALOUS QUANTUM OSCILLATIONS OF SURFACE IMPEDANCE -U-

AUTHOR-(02)-MINTS, R.G., LANDAU, L.D.

COUNTRY OF INFO--USSR

M

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 128-32 (JAN. 1970)

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--QUANTUM OSCILLATION, EXTERNAL MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1103 STEP NO--US/0000/70/011/002/0128/0132

CIRC ACCESSION NO--AP0136523

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136523

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS POINT OUT SOME OF THE MOST ESSENTIAL FEATURES OF THE ANOMALOUS QUANTUM OSCILLATIONS OF SURFACE IMPEDANCE. IT IS NOTED THAT THE DEPTH OF PENETRATION CAN NEVER DECREASE BELOW THE RADIUM R OF THE CONDUCTION ELECTRON ORBIT. PHYSICALLY THIS IS CONNECTED WITH THE FACT THAT THE MAGNETIC MOMENT IS PRODUCED BY THE SELF CONSISTENT INDUCTION FIELD B AT DISTANCES ON THE ORDER OF R. THE AMPLITUDE Z SUBMAX AND THE WIDTH OF THE OSCILLATION PEAKS (DELTAH) SUBRES OF THE SURFACE IMPEDANCE, AND ALSO THE MAXIMUM VALUE OF THE DERIVATIVE OF THE SURFACE IMPEDANCE WITH RESPECT TO THE EXTERNAL MAGNETIC FIELD, ARE ESTIMATED. FACILITY: USSR ACAD. SCIS.

UNCLASSIFIED

USSR

UDC 523.2/7:539.24:536.42

MINTS, R. I., PETUKHOVA, T. M., and SEGAL', V. M., Ural Polytechnic Institute

"Structure of a Metallic Fragment of a Lunar Substance"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73, pp 2-3

Abstract: A metallic fragment of a lunar substance, supplied by the Luna-16 space vehicle, was investigated. Maximum size of the particles was 450 microns and it had the following average composition: Fe + 5.5% Ni + 0.6% Co. No carbon was detected. In a metallographic study of the fragment a subgrain with martensitic dendrite morphology was observed in one of the cross sections. Niemann bands were visible in the twinning formations of the fragment. These morphological structures and crystallographic features (90% of the particle was in the alpha-solid solution) made it possible to relate the dendritic martensite of the lunar nickel-iron to the group of athermal martensites. 5 bibliographic references.

1/1

USSR M UDC 548.4

MINTS, R. I., KORTOV, V. S., MELEKHIN, V. P., KISLITSIN, Ye. A., PLEKHANOVA, E. A., and PESHCHIN, G. F., Ural Polytechnic Institute imeni S. M. Kirov

"Effect of Deformation on Electron Work Function and Exoemission From Surface of Noble Metals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 37-42

Abstract: The article describes results of a study of regularities in the exoemission effect in the deformation of noble metals (silver, gold, platinum, and palladium). Changes in the electron work function and exoelectronic emission of the metals were studied under various types of deformation (tension, grinding, polishing). The electron work function was studied by measuring the contact potential difference by the dynamic capacitor method. The results indicate that plastic deformation due to surface tension and machining is accompanied by a decrease in the electron work function. This means that there is a

1/2

USSR

MINTS, R. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970, pp 37-42

decline in the potential barrier value and an increase in the probability of electron emission. This effect manifests itself in the appearance of exoelectronic emission, the intensity of which depends on the degree of deformation. Simultaneous measurement of these quantities makes it possible to establish the interrelationship between the changes observed in the surface electric properties and disturbance of the surface structure and the physicochemical processes initiated by deformation.

2/2

Analysis and Testing

USSR

UDC 535.211:537.581

KORTOV, V. S., MINTS, R. I., PETUKHOVA, T. M., Sverdlovsk

"The Effect of Laser Action on Exoelectronic Emission from Metallic Surfaces"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 70, pp 3-7

Abstract: Exoelectronic emission (the Cramer effect) is widely used in the study of plastic deformation and of structural and phase transformations in the surface layers of solids. Using a secondary-emission multiplier in a 10^{-5} mm Hg vacuum, the authors measured thermostimulated exoemission from the surface of pure Au, Pt, Pd, and Ni and from austenitic alloys 1Kh18N9T and 40N25 when subjected to pulsed laser action. Maximum exoemission appeared in the 100-300°C range. Relief and interferometric data established a connection between the parameters of exoemission and the structural changes in the metallic surfaces. It is suggested the present method may be used to study locally deformed portions of metallic surfaces.

1/1

USSR

UDC: 669.14-25:620.13

MINTS, R. I., and PETUKHOVA, T. M.

"Influence of Steel Structure on the Formation of Pitting by a Laser Beam"

Izv. VUZ, Chernaya Metallurgiya, No 2, 1970, pp 102-107

Abstract: The effect of the electromagnetic radiation of a laser beam on steel is to increase the local temperature to 10^4-10^7° C, resulting in instantaneous evaporation of the metal and the formation of plasma jets, creating a pressure of up to 10^{15} atm. at the surface of the metal. This results in surface damage in the form of pitting. The combination of a great variety of factors (mechanical, chemical, thermal, electrical, etc.) is characteristic. The behavior of ferrite, pearlite, austenite, martensite, troostite, and cementite under the influence of laser pulses was studied by the metallographic and topographic methods, and the relief and microhardness were determined. It was established that with the electromagnetic radiation power present in the laser beam (power density 10^8-10^{10} w/cm^2, area of application 10^{-4} cm^2) the nature of the pitting and the relief near the crater depend on the structure of the metal. Five illustrations; two tables; seven biblio. refs.

1/1

Acc. Nr: AP0048292 Abstracting Service: CHEMICAL ABST. 5 V70 Ref. Code: UR0472

M

94402u Effect of laser action on exoelectron emission from the surface of metals. Kortov, V. S.; Mints, R. I.; Patukhova, T. M. (USSR). *Fiz. Khim. Obrab. Mater.* 1970, (1), 3-7 (Russ). The effect of laser action on the surface of pure Au, Pt, Pd, Ni, and of alloys 1Kh18N9T and 40N25 was studied by the exoelectron emission method described previously (Kortov, *et al.*, 1966). No emission was observed at room temp. At higher temps. thermoemission passed through a max. Pt and Pd exhibited 2 peaks at different temps. Emission was due to laser action. Cracks and changes in relief and stresses occurred on the surface. The peaks of deformed specimens exposed to air decreased. This might be due to relaxation of stresses as well as to the deactivation of structural defects on the surface.

GBJR

I B

1/1

REEL/FRAME 19792014

18

Radiation Chemistry

USSR UDC 548.3

MINTS, R. I., MIL'MAN, I. I., KRYUK, V. I., and TARASOV, L. S., Ural Polytechnical Institue, Sverdlovsk, and Institute of Geochemistry and Analytical Chemistry imeni I. V. Vernadskiy, Academy of Sciences USSR, Moscow

"Exoelectronic Emission of Particles of Lunar Anorthosite Rocks Supplied by the Automatic Station 'Luna-20'"

Moscow, Geokhimiya, No 5, May 73, pp 683-688

Abstract: The experiments carried out showed that particles of the lunar anorthosite rocks recovered by the lunar automatic station "Luna-20" possess natural exoelectronic emission. The characteristics of this electronic emission is related to the structural state of the fragments under investigation. With increased degree of recrystallization the number of emission peaks increases, especially of the high temperature peaks. This is accompanied by increased activation energy of the electron ejection. The exoemission parameters (such as temperature, location, number and intensity of the emission peaks, activation energy of the process) lead to an assumption that close to the surface of anorthosite particles there exist structural irregularities which differ by their energetic stability.

1/1

1/2 065 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF THE STRUCTURE OF STEEL ON THE FORMATION OF PITS BY THE ACTION OF A LASER BEAM -U-

AUTHOR-(02)-MINTS, R.L., PETUKHOVA, T.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVEO., CHERN. MET. 1970, 13(2), 102-7

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--AUSTENITE STEEL, RUBY LASER, METAL SURFACE PROPERTY, LASER RADIATION, METAL HARDNESS, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1773 STEP NO--UR/0148/70/013/002/0102/0107

CIRC ACCESSION NO--AT0115602

UNCLASSIFIED

2/2 065 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0115602

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEELS WITH STRUCTURES OF FERRITE, PEARLITE, MARTENSITE, TROOSTITE, GRANULAR CEMENTITE, AND AUSTENITE WERE STUDIED BY RUBY LASERS WITH 3 TIMES 10 NEGATIVE PRIME3 SEC IMPULSES. THE RADIATION ENERGY OF AN IMPULSE WAS 1.5 J. METALLOGRAPHIC ANAL., MICROHARDNESS, RELIEF, AND TOPOGRAPHY ON THE SURFACE, STRESSES AROUND THE HOLE, AND CHANGES IN THE CHEM. COMPN. OF THE STEEL UNDER THE EFFECT OF LASER RADIATION WERE DETD. THE CHARACTER AND PROPERTIES OF PITS FORMED BY THE LASER BEAM DEPENDED MUCH ON THE STRUCTURE OF THE STEEL: THE SMALLEST DIAM. PITS WERE MADE IN FERRITE STEEL WHILE THE LARGEST OCCURED IN UNSTABLE AUSTENITE. TROOSTITE AND GRANULAR CEMENTITE GAVE PRACTICALLY THE SAME SIZE OF CRATERS. PEARLITE AND MARTENSITE HAD THE HIGHEST RELIEF WHILE THE LOWEST OCCURED WITH STABLE AUSTENITE. THE ACTION OF THE LASER BEAM WAS MAINLY THERMAL; HOWEVER, THERE WAS ALSO AN INCREASE OF HARDNESS IN THE FOLLOWING ORDER: FERRITE, PEARLITE, AUSTENITE, WHICH HAD, IN THE ZONES OF HIGHES RELIEF, MICROHARDNESS 3000, 5000, AND 7500 KG-MM PRIME3, RESP., WHILE THE NEIGHBORING REGIONS HAD INITIAL VALUES OF 200-300 KG-MM PRIME2. FACILITY: URAL POLITEKH. INST. FACILITY: SVEDLOVSK. USSR.

UNCLASSIFIED

USSR

UDC 539.4:536.453

MEKHED, G. N., MINTS, R. S., AKIF'YEVA, O. I., TOROPOV, V. M.

"Flow Curves for Nickel-Base Alloys"

V sb. Protsessy formoizmeneniya met. i splavov (Processes of Deformation of Metals and Alloys--collection of works), Moscow, "Nauka", 1971, pp 140-144 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V884)

Translation: A study was made of the effect which molybdenum and zirconium have on the mechanical properties of Ni-Nb-Al alloys in the cast state at heat-treat temperatures. The mechanical properties were determined by studying specimens on the MK-20 machine at temperatures of 900, 1000, and 1100°C. From the working diagrams, the maximum tangential stresses τ_{max} and octahedral shear q_n were computed, and flow curves were plotted. The results show that doping nickel-base alloys with Mo and Zr has a favorable effect on the high-temperature strength of these alloys, which may be attributed to the solubility of these elements in each of the structural components of the alloys, and to the refining action of Mo and Zr on the grains of the metal and on the boundaries between them. Authors' abstract.

1/1

USSR UDC 539.4:536.453

MEKHRD, G. N., MINTS, R. S., MALKOV, Yu. S., TOROPOV, V. M., ANIF'YEVA, O. I.

"Investigation of the Mechanical Properties of Type NIAN Alloys in the Cast and Deformed State"

V sb. Protsessy formoizmeneniya met. i splavov (Processes of Deformation of Metals and Alloys--collection of works), Moscow, "Nauka", 1971, pp 122-125 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V803)

Translation: The mechanical properties (breaking point, relative lateral contraction, relative longitudinal extension) of type NIAN alloys (Ni, Nb, Al) were determined in the temperature range of 20-1100°C by a standard procedure. The resultant data show that the strength decreases monotonically with an increase in testing temperature. The ductility properties of the alloys change little with an increase in temperature up to a certain point, after which they increase noticeably. Adding molybdenum and zirconium to NIAN-2 alloy increases the strength properties of the alloy appreciably throughout the entire temperature range. It was found that deformation increases the strength and ductility of NIAN type alloys. The

1/2

USSR

MEKHED, G. N. et al., Protsessy formoizmeneniya met. i splavov, Moscow, "Nauka", 1971, pp 122-125

breaking point of NIAN-2 alloy at room temperature in the deformed state is 2.5 times the breaking point of the alloy in the cast state. The increase in strength of type NIAN alloys after deformation may be attributed to cold hardening and deformation aging. Authors' abstract.

2/2

USSR

UDC 591.1.15

MINTS, S. M., PADALKA, YE. S., and LAZAROVICH, V. G.

"Influence of Super-High-Frequency Electromagnetic Field on the Content of Metals and Metal Proteides in Animal Organs and Tissues"

Nuach. dokl. vyssh. shkoly. Biol. n. (Scientific Reports of the Higher School) No 2, 1973, pp 46-49 (from RZh-Biologicheskaya Khimiya, No 12, Jun 73, Abstract No 12 F 1403)

Translation: Experiments on 55 rats revealed that protracted, general exposure to super-high-frequency electromagnetic fields alters the content of iron, copper, cobalt and zinc in animal organs and tissues and also alters the activity of metal proteides of perulic plasmin and the degree of saturation of the transferrin of the blood serum with iron.

1/1

USSR

UDC 612.014.426

MINTS, S. M., PADALKA, Ye. S., and LAZAROVICH, V. G., Department of Pathological Physiology, Ivano-Frankovsk Medical Institute

"Effect of a Superhigh-Frequency Electromagnetic Field on the Metal and Metalloprotein Content of Animal Organs and Tissues"

Moscow, Biologicheskiye Nauki, No 2, 1973, pp 46-49

Abstract: Rats were treated daily for 28 days with a superhigh-frequency electromagnetic field to determine changes in the content of metals and metal-containing proteins in various organs and tissues. In the 1st 14 days the iron content of blood serum transferrin decreased but then rose to twice normal by the 28th day. Iron decreased in blood and muscles and increased in bones and liver. Ceruloplasmin activity fluctuated throughout the experiment. Copper content in blood and bone was heightened throughout the experiment. It rose in the liver by the 7th day, and remained high in muscle until the 21st day. Zinc increased in blood and on the 7th and 21st days in bone, while it decreased in the liver and muscles. Cobalt decreased sharply throughout the experiment in blood, liver, and bone, while reduction in muscles occurred only on the 14th day. Thus an electromagnetic field causes considerable shifts in metal distribution. This may be the reason for sensitivity of blood formation 1/2

USSR

MINTS, S. M., et al., Biologicheskiye Nauki, No 2, 1973, pp 46-49

to electromagnetic fields. It is suggested that redistribution is affected by disruption of vessel-tissue permeability and may be involved in changes of nucleic acid metabolism and redox processes previously noted in response to superhigh-frequency electromagnetic fields.

2/2

USSR UDC 617.7-007.681+611.38:617.711.37-02:577.175.[illegible]-092.9

MINNS, S. M., Chair of Pathological Physiology, Lvov-[illegible] Medical Institute

"Experimental Data on the Effect of Some Trace Elements on Intraocular Pressure, Hydrodynamics, and Permeability of Eye Blood Vessels"

Kiev, Oftal'mologicheskiy Zhurnal, No 1, 1970, pp 54-[illegible]

Abstract: [illegible] on guinea pigs and rabbits [illegible] intraocular injections of cobalt chloride (0.1 mg/kg) and [illegible] (1 mg/kg) for 7-15 days caused a slight elevation of intraocular pressure, which returned to normal levels [illegible] administration of Benzrine, a carbonic anhydrase inhibitor [illegible] 5 hrs or after the injection of nine animals, [illegible] a marked hypotensive effect within 15-30 minutes, but [illegible] hours, the normal level of intraocular pressure was restored in most of the animals. When Benzrine was administered after nine, [illegible] by [illegible] was normalized more prolonged. The [illegible] of [illegible] [illegible]

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--VAGOTOMY AND PYLOROPLASTY IN SURGERY OF DUODENAL ULCERS -U-

AUTHOR-(04)-PANTSYREV, U.M., GRINBERG, A.A., MINTS, V.YA., AGEYCHEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 74-79

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, SURGERY, CRANIAL NERVE, LESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0030 STEP NO--UR/0589/70/104/004/0074/0079

CIRC ACCESSION NO--AP0105137

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105137

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEINEKE-MIKULICZ PYLOROPLASTY ASSOCIATED WITH BILATERAL TRUNK OR SELECTIVE VAGOTOMY WAS ACCOMPLISHED IN 62 PATIENTS WITH DUODENAL ULCERS. FOURTY EIGHT PATIENTS WERE OPERATED UPON ON URGENT INDICATIONS FOR PERFORATION OR PROFUSE HEMORRHAGE FROM DUODENAL ULCERS. LIGATION OF THE BLEEDING VESSEL WITH PYLOROPLASTY AND VAGOTOMY IS BELIEVED TO BE ADVANTAGEOUS IS SURGERY OF PROFUSE HEMORRHAGES, WHEN THE ROUTINE GASTRECTOMY YIELDS STILL GREAT PER CENT OF THE POSTOPERATIVE MORTALITY. DISSECTION OF A PERFORATING DUODENAL ULCER, PERFORMED IN 38 PATIENTS, IS CONSIDERED TO BE MORE RADICAL THAN SIMPLE SUTURING OF THE ULCER. THE FORMER IS MORE FEASIBLE TECHNICALLY THAN GASTRECTOMY. IN VAST MAJORITY OF PATIENTS PYLOROPLASTY AND VAGOTOMY RESULTED IN RELIABLE INHIBITION OF THE GASTRIC SECRETION. AMONG 62 PATIENTS THERE WERE TWO DEATHS DUE TO CAUSES NOT RELATIVE TO SURGICAL INTERVENTION. IN THE REMAINDER GOOD IMMEDIATE RESULTS WERE OBTAINED. TWENTY SIX PATIENTS WERE INVESTIGATED CLINICALLY WITHIN THE TERMS FROM 3 MONTHS TO 1.5 YEARS, NO ULCER RECURRENCE WAS NOTED. SLIGHT DIARRHEA WAS OBSERVED IN 2 CASES. NO MARKED DUMPING SYNDROME PHENOMENA WERE OBSERVED.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--HYDROLYSIS OF DINITROACETONITRILE IN SULFURIC ACID -U-

AUTHOR-(04)-NIKITS, YE.S., TESLER, R.S., GOLOD, YE.L., BAGAL, L.I.

COUNTRY OF INFO--USSR

M

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 698-701

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROLYSIS, ORGANIC NITRILE COMPOUND, SULFURIC ACID, CHEMICAL REACTION KINETICS, ACTIVATION ENERGY, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2177 STEP NO--UR/0366/70/006/004/0698/0701

CIRC ACCESSION NO--AP0127704

2/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF (O SUB2 N) SUB2 CHCN (I) HYDROLYSIS WITH 85.3-99.0PERCENT H SUB2 SO SUB4 WERE STUDIED IN THE TEMP. RANGE 5.8-25DEGREES. THE REACTION IS BIMOL, AND ITS ACTIVATION ENERGY DECREASED WITH THE INCREASE OF H SUB2 SO SUB4 CONCN. A MECHANISM IS PROPOSED. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

USSR

UDC 612.017.1-06:614.72

OLEFIR, A. I., MINTSER, O. P., SOVA, R. YE., Candidates of Medical Sciences, Institute of Labor Hygiene and Occupational Disease, Kiev

"Complex Evaluation of the State of Nonspecific Immunity under the Effect of External Environmental Factors"

Moscow, Gigiyena Sanitariya, No 10, 1972, pp 85-89

Abstract: A complex evaluation was made of nonspecific immunity under the effect of environmental factors. The nature of the distribution of immunological tests was considered before beginning the evaluation. The natural immunity indexes of the described tests were found to be characterized by Poisson distribution. For the distribution of variables differing from normal, the difficulties of mathematical analysis are very large. Therefore, it was proposed that evaluation of the differences be used by each gradation of the investigated parameter individually. For the overall evaluation the Rx criterion was proposed:

$$Rx = \Sigma ti,$$

where t is the value of the Student criterion calculated by the usual procedure for each experimental point of the curve. The criterion means that the greater the value of t, the smaller the probability that the given difference is random.

1/3

USSR

OLIFIR, A. I., et al., Gigiyena Sanitariya, No 10, 1971, pp 85-89

The sum of the values of t permits an integral characteristic of the parameter shift from the norm to be obtained. The biological value of a symptom or sign was also reflected in the evaluation, and for this purpose the variability of the parameter and importance of the test were used. The coefficients of biological significance Q were adopted which, on being taken into account, resulted in the following formula:

$$R_x = \Sigma ti \frac{Q_i}{tg\ \alpha_i};$$

where $\frac{Q_i}{tg\ \alpha_i} = Si$; Si is the constant for each index. The final formula has the form:

$$Rx = \Sigma ti\ Si.$$

The complex evaluation of the level of nonspecific immunity is the summation of the deviations of the humoral, cellular and barrier immunities. Therefore:

$$Rx = Gx + Cx + Tx.$$

In determining the significance of the degrees of the deviations Gx, Cx, Tx, least and greatest numerical expressions were used, found after complex

2/3

USSR

OLIFIR, A. I., et al., Gigiyena Sanitariya, No 10, 1972, pp 85-89

evaluation of the tests in analogs subjected to the chronic effect of a series of carbamate, organophosphorus and organochlorine pesticides in doses of 1/20 to 1/50 LD_{50}. The entire range of variation of the proposed criterion was divided into four levels by the method frequently used in physiological research [V. S. Genes, Nekotoryye prostyye metody kiberneticheskoy obrabotki dannykh diagnosticheskikh i fiziologicheskikh issledovaniy, (Some Simple Methods of Cybernetic Processing of Data of Diagnostic and Physiological Studies), Moscow, 1967].

3/3

USSR UDC 8.74

MINTSER, O. P., CHEPKIY, L. P., TSYGANIY, A. A., ZASLAVSKIY, S. YA.

"Problems of Medical Cybernetics"

Problemy meditsinskoy kibernetiki (Problems of Medical Cybernetics), Moscow, Nauka Press, 1972, 309 pp, ill., 1 r. 44 k. (from RZhMKibernetika, No 7, Jul 72, Abstract No 7V643K)

Translation: A study was made of the problems of applying cybernetics media in medical practice. The use of computers for diagnosing and developing the prognosis of diseases and also when selecting the optimal treatment procedure and constructing the model of the disease is discussed. Comparative characteristics of various medical data processing algorithms are presented in clinical examples.

1/1

USSR UDC 669.71.053.24(088.8)

MINTSIKOVSKIY, B. A.

"A Melting and Distributing Furnace"

USSR Author's Certificate No. 304412, filed 10/03.70, published 14/07/71. (Translated from Referativnyy Zhurnal Metallurgiya, No 5, 1972, Abstract No 3G118P).

Translation: Designed for simultaneous melting of ingots and wastes of Al, the furnace is equipped with a heater installed on the internal surface of the distributor valve aperture at an angle to the metal surface while the outer walls of the muffle are cellular. 2 figs.

1/1

USSR

UDC 669.713.7:66.012.1.004.14

MINTSIS, M. YA., and SHTERN, V. I.

"Testing the Duration of the Anode Effects During Electrolysis of Aluminum"

Tsvetnyye Metally, No 3, Mar 71, pp 55-57.

Abstract: The introduction of a testing and regulation system has demonstrated that the mean duration of the anode effects significantly exceeds the time interval necessary for liquidation of anode effects. A test system is suggested for recording electrolyzers in which the duration of the anode effect exceeds a fixed value. This allows improvement of the technological discipline of servicing of electrolyzers and decreases the mean duration of anode effects by 25 sec.

1/1

USSR UDC 621.396.24:523.53

MINULLIN, R.G., SIDOROV, V.V.

"Comparison Of The Characteristics Of Ultrashort Wave Signals Reflected From the E_c Layer And Meteor Trails"

V sb. Meteorn. rasprostr. radiovoln (Meteoric Propagation Of Radio Waves--Collection Of Works), Issue 8, Kazan', Kazan University, 1971, pp 55-65 (from RZh--Radiotekhnika, No 9, Sept 1971, Abstract No 9A192)

Translation: In connection with the fact that on the tracks [trass] of meteor burst communication, transmission of signals is sometimes possible by means of reflection from the sporadic E layer, a comparative study is made of the characteristics of signals reflected from this layer and from meteor trails. The fill factor of the reflected signals (the ratio of the time of existence of the reflected signal to the time of observation) is measured. Distribution curves are presented for the azimuth angles of the reflected signals; it is possible to use the difference between curves corresponding to both types of propagation for separation of these types. The distribution differs insignificantly for the angles of elevation. It is established that the maximum values of the amplitude of the signals dependent upon the sporadic layer exceed the signals from the meteor trails by ~ 2 orders of magnitude; consequently, during reception it is necessary to use an automatic gain control. 2 ill.4 ref. N.S.

1/1

USSR UDC 612.882

MINUT-SOROKHTINA, Ol'ga Pavlovna

Fiziologiya termoretseptsii (Physiology of Thermoreception), Moscow, "Meditsina," 1972, 228 pp

Translation: Annotation: The monograph gives a detailed account of the present state of studies on sensation of temperature in man and mammals. Most attention was paid to primary processes occurring in the receptor endings. Special significance is attached to the activity of receptors situated in subcutaneous vessels, which provide a feedback in the regulation of heat emission. The monograph not only generalizes information on sensations of temperature, but also outlines the paths of further research. The book is intended for physiologists, pathophysiologists, and neuropathologists. 228 pages, 41 figures, 10 tables, Bibliography: pp 211-227

Table of Contents:

1/3

USSR

MINUT-SOROKHTINA, Ol'ga Pavlovna, Fiziologiya termoretseptsii, "Meditsina," 1972, 228 pp

2/3

USSR

MINUT-SOROKHTINA, Ol'ga Pavlovna, Fiziologiya termoretseptsii, "Meditsina," 1972, 228 pp

3/3

UDC 612.882

USSR

MINUT-SOROKHTINA, O. P., Chair of Human and Animal Physiology, State University imeni O. V. Kuusinen, Petrozavodsk

"The Duality of Peripheral Cold Receptivity"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 6, Jun 70, pp 886-894

Abstract: Electrophysiological studies have disclosed the presence of two types of peripheral cold receptors, those excited by cold only, and those excited by cold and mechanical irritation of the skin. The steady rhythmic activity of cold receptors of the first type, which are located in the smooth muscles of subcutaneous blood vessels, is mediated by the tonus of these vessels, which depends on the skin temperature. The mechanism of action of the second kind of receptors (mechano-cold receptors) is similar. These observations are supported by the presence of profuse vascularization in the formations which are sensitive to mechanical irritation (touching of the skin). The dual reactivity of mechano-cold receptors is due to the fact that a single sensory axon supplies terminals for both a skin mechanoreceptor and a cutaneous or subcutaneous blood vessel located in its vicinity. In experiments carried out at the author's laboratory,

1/2

USSR

MINOT-SOROKAYEVA, O. P., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 6, Jun 70, pp 886-894

the two reactions of mechano-cold receptors were separated. Adrenaline in a concentration producing vascular spasm blocked the response to local cooling without suppressing the response to mechanical irritation, while carbocholine blocked the reaction to mechanical irritation without suppressing the reaction to a drop in temperature. The mechano-cold receptors aid in determining the location of the cold irritation; the action of the first kind of cold receptors, which play a significant role in regulation of the body temperature, is less specific.

2/2

ARM/FSTC HT-23-1773-72

DEPARTMENT OF THE ARMY
U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER
220 SEVENTH STREET NE
CHARLOTTESVILLE, VIRGINIA 22901

TRANSLATION

In Reply Refer to
FSTC HT-23-1773-72
DIA T.I.S. No. 120 2701

Date 31 May 1973

Copy 1 of 1
B Fast
Cost/Sec

ENGLISH TITLE: DETERMINATION OF TEMPERATURES OF A FLOW AND OF A CHANNEL WALL CONTAINING HEAT

SOURCE: Teploenergetika i Teplotekhnika, Issue 15, Kiev 1970, pp 52-56

AUTHOR: Minyaylenko, N. A.

LANGUAGE: Russian

RECEIVED: 5 Mar 1973
TRANSLATOR: Mrs Kate
COUNTRY: USSR

MINYAYLENKO, N. A.

NOTICE

[illegible] presented in the original text. No attempt has been made to correct the [illegible] errors of fact. The translation is published with a minimum of copy editing and graphics preparation in the interests of the dissemination of information.

Approved for public release; Distribution unlimited

(1)

Many modern devices use constant heat heat sources : for example, heating of channels with electric current, heating with the heat of vaporization units moistening the tube with vapor, heating as a result of decay of radioactive substances etc.).

The unsteady heat exchange processes occurring in such channels while heat carriers are being pump through them are fairly complex and are described a system of equations including the equation of thermal conductivity for solids, the equation of energy of a heat carrier, etc. (equations of motion, continuity, state).

In engineering calculations, the equation of unsteady thermal conductivity is written in the two-dimensional approximation, and the equation of energy and motion of flow, in the multi-sectional approximation.

Further refinement of the calculation through the introduction of three-dimensional equations of energy and motion is practically unacceptable because of the cumbersome operations involved, and futhermore, no sufficiently reliable data are available on the sufficiency of turbulent transfer in non-isothermal unsteady conditions.

In designing, operating and automatically controlling these units, it is important to know the temperature of the channel wall and flow in any cross-section and at any instant of time, and also the influence of basic factors thereon. The flow temperature must not be considered constant. An example that can be cited is a channel whose inner wall is cooled or heated by the heat carrier.

We shall consider cases in which the physical parameters of the heat

Biochemistry

USSR

VINOGRADOVA, M. F., MIKHAYLO, D. D.

"Intensity of Lipoid Metabolism and Complexes of Lipoids With Proteins in the Mitochondria of the Small Intestines of Irradiated Animals"

Nauch. dokl. vysah. shkoly. Biol. n. (Scientific Reports of Schools of Higher Education. Biological Sciences), 1971, No 7, pp 59-62 (from Khim-Biologicheskaya Khimiya, No 23, Dec 71, Abstract No 23P1582)

Abstract: The intensity of restoration of lipids and their complexes with proteins changes significantly in the mitochondria of the small intestines of rats 48 hours after 600 roentgens of x-irradiation. The radioactivity of the entire suspension of mitochondria and protein complexes in the irradiated animals drops. Separate determination of the radioactivity of the proteins and lipids of these complexes demonstrated that 2-C^{14}-acetate is included both in the lipid and the protein part of the lipoprotein molecule. Normally, more than half of all the activity of the lipoproteins goes to radioactivity of the lipids; under the

1/2

USSR

VINOGRADOVA, M. F., et al, Nauch. dokl. vyssh. shkoly. Biol. n., 1971, No 7, pp 59-62

conditions of radiation injury of the animals, a large part of the radioactivity goes to the protein. This is connected with significant inhibition of the biosynthesis of lipids in the mitochondria of irradiated rats.

2/2

USSR

PASHKEYEV, S. D., MINYAZOV, R. I.

"Operative Planning for Heterogeneous Specialized Computer Systems"

Vychisl. Sistemy. [Computer Systems -- Collection of Works], No 48, Novosibirsk, 1971, pp 108-113 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V822 by A. Krasilov).

Translation: The problem of planning is selection of the optimal schedule according to the criterion

$$T_{BC} = \min_{j} \{\max T_j\},$$

where T_j is the time the j-th computer is occupied performing a group of tasks. A simplified, accelerated and more effective as to speed and memory solution of the problem is suggested, using the criterion

$$Q^i = \lambda_1 \tau^i_{пр} + \lambda_2 \tau_{ci} + \lambda_3 D_{jvбаз} - \lambda_4 \sum_{k=i+1}^{m} a_{ik} \tau_{kср} - \lambda_5 \tau_{jv} - \lambda_6 \sum_{k=i+1}^{m} a_{ik} \tau_{окi},$$

1/2

USSR

PASHKEYEV, S. D., MINYAZOV, R. I., Vychisl. Sistemy., No 48, Novosibirsk, 1971, pp 108-113.

where $\tau_{\pi p}$ is the downtime of a computer on the i-th task, τ_0^i is the exchange time, τ_{icp} is the mean time required to perform the i-th task in various computers, τ_{oki} is the input size of the k-th task, informationally related to the i-th task, $\tau_{i\nu\text{баз}}$ is the time the i-th computer of v-th type is busy with the i-th task, λ_i are the weight factors for adaptation of the algorithm from various groups of tasks. A block diagram of an operative planning algorithm is presented.

2/2

USSR

UDC 8.74

PASHKEYEV, S. D., MINYAZOV, R. I.

"Operational Planning for Nonhomogeneous, Specialized Computer Systems"

Novosibirsk, Vychisl. sistemy--sbornik (Computer Systems--collection of works), vyp. 48, 1971, pp 108-113 (from RZh-Matematika, No 1, Jan 73, abstract No 1V822 by A. Krasilov)

Translation: The problem of planning involves development of an optimum schedule in accordance with the criterion

$$T_{ac} = \min (\max_j T_j),$$

where T_j is the busy time of the j-th computer in processing groups of problems. A solution for the problem is proposed which is simpler, faster, and more efficient with respect to storage volume and speed than dynamic programming, utilizing the criterion

$$Q^l = \lambda_1 \tau^l_{cp} + \lambda_2 \tau_{ol} + \lambda_3 D_{j\,vhis} - \lambda_4 \sum_{k=l+1}^{m} a_{lk} \tau_{kcp} - \lambda_5 \tau_{iv} - \lambda_6 \sum_{k=l+1}^{m} a_{lk} \tau_{kol}.$$

1/2

USSR

PASHKEYEV, S. D., MINYAZOV, R. I., Vychisl. sistemy--sbornik, vyp. 48, 1971, pp 108-113

where $\tau^{i}_{\text{пр}}$ is the idle time of the computer on the i-th problem; τ^{i}_{0} is exchange time; τ_{icp} is the mean time of realization of the i-th problem on various computers; τ_{0Ki} is the input power of the k-th problem which is informationally related to the i-th problem; $\tau_{i\nu\sigma a}$ is the busy time of the i-th computer of ν-th type with the i-th problem; λ_i are the weighting coefficients for adaptation of the algorithm for various groups of problems. A block diagram of the algorithm of operational planning is presented.

2/2

Source: FPRS #59588 23 Oct 73

UDC 551.557(-062.3)

ZONAL WIND FIELD STRUCTURE IN THE STRATOSPHERE AND LOWER MESOSPHERE OF THE TROPICAL ZONE DURING THE EQUINOXES

[Article by L. S. Minyushina, Central Aerological Observatory; Moscow, Meteorologiya i Gidrologiya, Russian, No 5, 1973, pp 40-46]

The spatial sections of the zonal wind component constructed by the data of four atmospheric rocket sounding stations are presented. The structure of the wind field in the tropical zone is analyzed for the equinox periods of 1965-1968.

In the study of the processes of atmospheric circulation in recent years more and more attention has been given to the meteorological conditions of the tropics. This is connected with the fact that the problem of the interrelation of the circulation processes in the stratosphere of the equatorial region with extratropical latitudes has at the present time great significance for improving the long-range weather forecasting.

On the basis of the rocket sounding data it has been established that in the atmosphere of the equatorial zone multicyclicity of the air currents is observed -- quasibiannual in the lower stratosphere and semiannual in the upper stratosphere and lower mesosphere. In spite of the series of hypotheses on the nature of the quasibiannual fluctuations in the circulation, a detailed review of which is presented in reference [3], up to now there is no generally accepted theory of the origin of the equatorial quasibiannual cycle. Nevertheless, many researchers [5, 13, 15, 16] consider that the cause of the occurrence of the quasiannual fluctuations in circulation must be found in the upper equatorial stratosphere.

For example, from references [5, 12, 13, 15-17] it follows that during the equinoxes the westerly winds of the semiannual cycle with a velocity of 9-10 km/month, as a rule, extend to altitudes of 35-40 km. However, once in two to two and one half years they penetrate to the levels of the middle stratosphere and give the beginning of the quasibiannual cycle to the westerly flows. This fact is well revealed in the graphs of the variations of the zonal wind velocity components constructed by the atmospheric rocket sounding data for Wornesenlya Island (7°59' south latitude, 14°28' west longitude) and Fort Sherman (9°20' north latitude, 75°59' west longitude) which were published in

MINYUSHINA, L. S.

USSR UDC: 532.593

GAVRILIN, B. L., MIRABEL', A. P.

"Numerical Model of Generation of Energy Spectrum by Interaction of Internal Waves"

Vnutr. Volny v Okeane [Internal Waves in the Ocean -- Collection of Works], Novosibirsk, 1972, pp 152-167 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12B476, from the resume)

Translation: A mathematical model of a three-dimensional, viscous, incompressible fluid is studied. The exciting motion is the vertical velocity, created as a stationary wave, harmonically distributed in the horizontal direction and having a vertical profile corresponding to the profiles of internal waves. Attention is accented on large scale oceanic processes, horizontal in nature and playing an important role in the formation of the vertical structure of hydrophysical elements. This role is clearly demonstrated using a simple thermocline model.

The purpose of the work is mathematical modeling of horizontal motions considering nonlinear redistribution of energy and the vertical structure corresponding to oceanic processes.

1/1

UDC 632.96

USSR

UMAROV, A. A., ROMANOVA, N. K., IBRAHALIYEVA, A. I., ZAMYRUT, T. B., LOY, N. P., MIRAKHMADAKOV, KH., Institute of Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR

"A Defoliant"

USSR Author's Certificate No 325967, filed 23 Sep 70, published 25 Feb 72 (from RZh-Khimiya, No 22, Nov 72, Abstract No 22N479 P)

Translation: A defoliant is proposed which contains $Mg(CO_3)_2$. The herbicide is distinguished by the fact that the severity of its effect is reduced by using 2-butylthiobenzthiazole (butylcaptax). The $Mg(CO_3)_2$ and butylcaptax are taken in a ratio of 1:1 or 2:1. The proposed mixture is tested for defoliating the thin-fiber grade of cotton plant. Application is done in the phase when 4-5 bolls have opened. On the 12-th day, leaf fall-off reached 82.5-93.7%; dry leaf content was 1.8%. T. A. Belyayeva.

1/1

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 015

TITLE--RESPIRATION, PHOSPHORYLATION, AND STRUCTURE OF RAT LIVER MITOCHONDRIA DURING THYROXINE ACTION IN VIVO AND IN VITRO -U-

AUTHOR-(04)-TURAKULOV, YA.KH., MIRAKHMEDOV, A.K., LYOVICH, N.A., KHUSAINOVA, F.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(2), 349-55

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MITOCHONDRION, LIVER FUNCTION, PHOSPHORYLATION, THYROXINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0279 STEP NO--UR/0218/70/035/002/0349/0355

CIRC ACCESSION NO--AP0135775

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 015

CIRC ACCESSION NO--AP0135775

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE OF SUCCINATE OXIDN. BY RAT LIVER MITOCHONDRIA INCREASED WITH INCREASING DOSES OF THYROXINE GIVEN TO THE RAT. LIVER MITOCHONDRIA FORMTHYROIDECTOMIZED RATS OXIDIZED SUCCINATE AT 83PERCENT OF THE CONTROL RATE. THESE MITOCHONDRIA IN VITRO WERE WEAKLY STIMULATED BY THYROXINE. LIVER MITOCHONDRIA FROM HYPERTHYROID RATS IN CONTACT WITH THYROXINE IN VITRO RESPIRED MORE RAPIDLY THAN DID CONTROLS, AND UNDERWENT PARTIAL UNCOUPLING, OF PHOSPHORYLATION. LIVER MITOCHONDRIA OF RATS WHICH HAD RECEIVED TOXIC DOSES OF THYROXINE WERE NOT AFFECTED BY THYROXINE OF ADP IN VITRO.

FACILITY: INST. BIOCHEM., TASHKENT, USSR.

UNCLASSIFIED

M

UDC 591.046:591.436:599.323.4

USSR

KHAMIDOV, D. Kh., MIRAKHMEDOW, A. K., and NEGANOVA, N. L., Institute of Biochemistry, Academy of Sciences Uzbek SSR

"Results of Histochemical Study of Glycogen and the Fine Structure of Irradiated Rat Liver Cells"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 3, 1970, pp 25-28

Abstract: The fine structure of irradiated rat liver cells was investigated. The rats were irradiated in two groups: one group with a lethal dose and the other group with sublethal doses of Co^{60} gamma-rays. Experiments were conducted on white randombred male rats weighing 150-200 g, with doses of 400 and 1200 r (dose rate 18-20 r/sec). Five days after irradiation with a dose of 400 r, marked accumulation of a large number of large glycogen granules was observed in hepatocytes, where they were arranged compactly in some cells, and loosely in others. At the peak of radiation sickness (10 days after irradiation), the number of glycogen granules dropped sharply. Fifteen days after irradiation, there was a tendency to normalization in some lobes, and a pronounced glycogen content compared with the normal state and especially with the peak period of radiation sickness. Thus, variation in the content of glycogen granules in hepatocytes

1/2

USSR

KHAMIDOV, D. Kh., et al, Uzbekskiy Biologicheskiy Zhurnal, No 3, 1970, pp 25-28

upon irradiation with lethal and sublethal doses occurs in parallel with the response of cellular organelles to irradiation. These shifts, detected histochemically, were confirmed by data obtained with the electron microscope.

2/2

UNCLASSIFIED PROCESSING DATE--16OCT70

1/3 010

TITLE--EFFECT OF LIME BINDERS ON THE SINTERING OF ALUMINA MASSES -U-

AUTHOR-(03)-PIROGOV, A.A., MIRAKYAN, M.M., PRIMACHENKO, V.V.

M

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(3), 29-32

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIME, ALUMINA, REFRACTORY MORTAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0869 STEP NO--UR/0131/70/035/003/0029/0032

CIRC ACCESSION NO--AP0118043

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/3 010

CIRC ACCESSION NO--AP0118043

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. TECH. AL SUB2 O SUB3, MEDICINAL GYPSUM (HEMIHYDRATE), CHALK, CA(OH)SUB2, AND HIGH ALUMINA CEMENT WERE CHOSEN AS INITIAL MATERIALS FOR THE STUDY OF THE EFFECT OF LIME BINDERS ON THE SINTERING OF AL SUB2 O SUB3 MASSES. THE LIME BINDERS WERE ADDED TO MASSES IN SUCH AMT. TO ACHIEVE 5PERCENT CAO IN THE FIRED SAMPLES. THIS CONTENT CORRESPONDS TO FORMING SIMILAR TO 60PERCENT CA HEXAALUMIANTE AFTER HIGH TEMP. FIRING. SAMPLES (CUBES) WERE FIRED 2 HR IN A FURNACE AT 600, 800, 1000, 1200, 1400, 1600, AND 1700DEGREES. ALL BINDERS USED INHIBIT SINTERING OF AL SUB2 O SUB3. ACCORDING TO THE INHIBITION EFFECT THE BINDERS ARE ARRANGED: HIGH ALUMINA CEMENT, CA(OH)SUB2, CHALK, AND GYPSUM. THE GYPSUM SHOWS THE MAX. INHIBITION EFFECT. A LOW APPARENT D. OF FIRED GYPSUM SAMPLES (1.77 G-CM PRIME3) IS CAUSED BY THE LOWERED D. OF DRIED SAMPLES AND BY THE LARGE WT. OSS DURING FIRING. THESE SAMPLES SHOW ALSO A MIN. VOL. SHRINKAGE, NAMELY 33.2PERCENT AT 1600DEGREES (SAMPLES OF PURE AL SUB2 O SUB3 49.8PERCENT). IN SAMPLES WITH LIME BINDERS THE FIRMATION OF CA ALUMINATES ACCOMPANYING VOL. ENLARGEMENT SETS IN. THE HIGHER THE DECOMPN. TEMP. OF THE LIME BINDERS, THE GREATER THE INERTIA TO SECONDARY CONTACT SINTERING OF AL SUB2 O SUB3 GRAINS AND HEXAALUMINATE FORMATION AND THE SMALLER THE SHRINKAGE. THE INTENSIVE SHRINKAGE OF MASSES WITH ALL ADDNS. BEINGS ONLY AFTER REACTIONS WHICH ARE ASSOCD. WITH THE VOL. ENLARGEMENT. A LARGER FIRING SHRINKAGE OF THE MASS WITH HIGH ALUMINA CEMENT ADDN. AT 600-900DEGREES IN COMPARISON WITH SHRINKAGES OF OTHER MASSES IS CONDITIONED BY THE DEHYDRATION OF THE CEMENT.

UNCLASSIFIED

3/3 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC. ACCESSION NO--AP0118043

ABSTRACT/EXTRACT--THE INHIBITION OF SINTERING UP TO 1200DEGREES OF THE LATTER MASS CAN BE EXPLAINED BY THE TRANSITION OF MONOALUMINATE INTO DIALUMINATE. FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOR., KHARKOV,USSR.

UNCLASSIFIED

M

USSR

PIROGOV, A. A., MIRAK'YAN, M. M.

"Influence of Lime Binders on the Sintering of Alumina Masses"

Moscow, Ogneupory, No 3, Mar 70, pp 29-32

Abstract: Various lime binders have various influences on co-paction of alumina masses during drying and roasting. Of the binders studied, gypsum had the strongest inhibiting influence on sintering of alumina. The decreased density of roasted alumina masses with gypsum added resulted from the lower flame shrinkage, a result of the higher decomposition temperature of gypsum, and increased weight loss during roasting.

1/1

Acc. Nr: AP0046636 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR 0131

82486m Effect of fluoride mineralizers on the sintering of alumina. Pirogov, A. A.; Mirak'yan, N. M.; Leonova, H. N.; Primachenko, V. V. (Ukr. Nauch.-Issled. Inst. Ogneupor., Kharkov, USSR). *Ogneupory* 1970, 35(1), 37-43 (Russ). The inhibiting effect of AlF_3 and CaF_2 on the sintering of Al_2O_3 was examd. Com. alumina contg. 99.42-99.49% Al_2O_3 was ground dry so as to obtain a grain size 5-10 μ, bulk d. 0.85 g/cm³, and sp. surface 11,671 cm²/g. After the addn. of 1% AlF_3 or CaF_2 of the grain size <0.2 mm and mixing, cubes (2 cm³) were prepd. and sintered at 1200-1700° for 4 hr. The fluoride mineralizers lowered the compressive strength and shrinkage of the samples. AlF_3 resulted in a stronger inhibiting effect on the sintering of Al_2O_3 at 1200-1550° than CaF_2. W. J. Skorski

REEL/FRAME

19781949

USSR UDC 681.327.11

MIRANOVSKIY, L. A., and SLAYEV, V. A., Leningrad Institute of Aviation Instrumentation

"Device for Recording and Reproducing Information on a Tape"

USSR Author's Certificate No 339922, kl G 06 k 7/00, filed 10 Dec 69, published 3 Jul 72 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, Abstract No 11 A433P)

Translation: A device is proposed for recording and reproducing information on a tape, containing two tape driving machanisms and recording and reading units corresponding to them. To improve the reliability of the apparatus, it includes switches and a linear conversion unit containing adders; the inputs of these are connected through the switches to the reading units of one tape drive, while the outputs are connected to switches to the recording units of the other tape drive. One illustration.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ANALYSIS OF GOLD AND IODINE IMPURITIES IN SILICON WHISKERS -U-

AUTHOR-(03)-AGIYEVSKIY, D.A., MIRANSKIY, I.A., TUSHKOVA, R.YA.

M

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 418-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--IODINE, GOLD, CHEMICAL ANALYSIS, SILICON, CRYSTALLIZATION, WHISKER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1897 STEP NO--UR/0363/70/006/003/0418/0420

CIRC ACCESSION NO--AP0115716

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--09DEC70

CIRC ACCESSION NO--AP0115716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF CERTAIN IMPURITIES ON THE GROWTH PROCESS OF SI WHISKERS IS DISCUSSED, AND THE RESULTS OF RADIOACTIVE ANAL. OF THE GROWN CRYSTALS RELATIVE TO THE I AND AU PRESENT ARE PRESENTED. THE AMPUL METHOD WITH THE USE OF CHEM. TRANSPORT REACTIONS WAS EMPLOYED FOR GROWING THE CRYSTALS. THE TOTAL PARTIAL PRESSURE IN THE EXPTS. WAS 80 MM HG; AND THE TEMP. DROP WAS 1100-950DEGREES. THE ADDN. OF A SMALL AMT. OF AU (1-2 MG IN THE FORM OF FOIL WITH A PURITY OF 99.99PERCENT) TO THE WEIGHED PORTION OF SI WEIGHING 2-3 G STIMULATES THE GROWTH OF FILAMENTARY SI CRYSTALS. AT A TRANSFER RATE OF 200-300 MG PER HR, THE GROWING PROCESS CONTINUES FOR 40-50 MIN. IN THIS CASE, A LARGE AMT. OF WHISKER CRYSTALS APPEARS IN THE CRYSTN. ZONE, GROWING ALONG THE ENTIRE SURFACE OF THE AMPUL. FURTHER, CERTAIN IMPURITIES DO NOT ENHANCE THE GROWTH OF THE WHISKERS. THUS, A SMALL AMT. OF O OR H SUB2 O VAPORS ENTIRELY INTERRUPTS EVEN THE SI TRANSFER PROCESS. TO BRING OUT THE ROLE OF AU IMPURITY IN THE GROWTH PROCESS OF SI WHISKER CRYSTALS, IT IS IMPORTANT TO SHOW THE PRESENCE OF AU IN THEIR COMPN. AND TO DET. ITS CONTENT. OF INTEREST ALSO IS THE QUESTION AS TO THE CONTENT OF THE TRANSPORTING AGENT IN THE CRYSTALS GROWN. THESE QUESTIONS ARE DISCUSSED USING THE RADIOACTIVATION ANAL.

FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 546.28:546.55

AGIYEVSKIY, D.A., MIRANSKIY, I.A., TUSHKOVA, R.YA., Institute of Nuclear Physics, Ulugbek, Academy of Sciences Uzbek SSR

"Analysis of Gold and Iodine Impurities in Thread-Like Silicon Crystals"

Moscow, Neorganicheskiye Materialy, Vol 6, No 3, 1970, pp 418-420

Abstract: The influence of certain impurities on the growth process of silicon crystals and the results of radioactive analysis of c[illegible] this for gold and iodine are reported. It was found that high purity silicon does not form threadlike crystals with the iodine method of growing, the crystals were grown by the ampule method using chemical transfer reactions. Addition of small quantities of gold (1-2 mg of 99.99% pure foil to 200-400 mg silicon) stimulates rapid growth of silicon filaments. Activation analysis showed that the transporting agent and the growth-stimulating impurity were present in the crystals. The gold content determined was $5 \cdot 10^{-3}$ wt% or $2.5 \cdot 10^{17}$ at cm^{-3}. This exceeds the concentration of gold which can be introduced to the crystal by diffusion, and is somewhat greater than that necessary for formation of a solid solution with silicon at the experimental temperature 950°C). The excess is apparently explained by the presence of a eutectic alloy which is necessary for the growth of crystals by the vapor-liquid-crystal mechanism.

1/1

USSR UDC 551.242.5(470,46+574,1)

MIRCHINK, M. F., SHAKHNOVSKIY, I. M. and SHEBALDIN, V. P., Institute of Geography and Russian Hydrological Institute, Saratogan Petroleum Geophysics Board

"Origin of the Step on the Flank of the Precaspian Depression"

Moscow, Geologiya Nefti i Gaza, No 1, Jan 73, pp 9-14

Abstract: The step on the flank of the Pre-caspian depression is held to have been formed by a peculiarity of the deep-sea sediment accumulation of the downwarp. The fact that the rate of sediment accumulation lagged significantly behind the rate of subsidence is said to have caused the formation of the step. It is maintained that the accumulation of sediment was cyclical on the north-west flank of the depression, with periods of subsidence and accumulation alternating. High precision gravity measurements, seismic prospecting, the reflected wave method and new data from drilling do not agree with the linear dislocation model of step formation. The cyclical sedimentation model indicates that the inner portion of the depression, near the side is not likely to contain gas of petroleum. However the terrigenous deposits of the middle carboniferous stratum whose width increases sharply near the flank step, are considered more promising in this regard.

1/1

UDC 582.28.095.14.3

USSR

MIRCHINK, T. G., KASHKINA, G. B., and ABATUROV, Yu. D., Chair of Soil Biology, Faculty of Soil Biology, Moscow State University imeni M. V. Lomonosov, Moscow

"The Resistance of Fungi Containing Various Pigments to Gamma-Irradiation"

Moscow, Mikrobiologiya, Vol 41, No 1, Jan/Feb 72, pp 83-86

Abstract: Twenty-one strains of fungi lacking pigment or containing various pigments were tested for their resistance to gamma-irradiation under a cobalt lamp. The pigmentless strain Cephalosporium acremonium and Penicillium luteum containing yellow-orange pigment of noncarotenoid type were killed by 80 to 100 curie. Their LD_{50} dose was 10 to 25 curie. The red-violet fungi of Fusarium sp. had a similar LD_{50} (10 to 25 curie), but they were killed by doses over 100 curie, and some strains of this species were killed by doses exceeding 250 curie. Stemphylium botryosum containing black pigment was very resistant: 1.2 percent to 1.7 percent survived irradiation by 625 curie. The strains isolated from high mountain soil samples had LD_{50} around 180 curie, those from lowland plain soil around 140 curie. Alternaria tennis had a similar resistance of its strains isolated from mountain soil, but it was more sensitive in lowland soil (LD_{50} = 60 to 80 curie). However, fungi of the genus Cladosporium were less resistant, being killed by 625 curie and having LD_{50}

1/2

USSR

MIRCHINK, T. G., et al., Mikrobiologiya, Vol 41, No 1, Jan/Feb 72, pp 83-86

at only 10 to 15 curie, in spite of their dark pigmentation. The presence of pigment usually increased the resistance to gamma-irradiation. The resistance of the strains within one species varied with the location from which the particular strains were isolated.

2/2

UDC 63.576.8.097.29

USSR

MIRCHINK, T. G., Moscow State University imeni M. V. Lomonosov

"Toxins of Soil Fungi and Phytopathogenic Fungi"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 5, 1970, pp 694-702

Abstract: Published data on the toxins of phytopathogenic and soil fungi are reviewed. These toxins are subdivided into three groups: those that have a toxic effect on plants and an antibiotic effect on microorganisms in approximately the same concentrations, those that affect plants but lack antibiotic activity (specific phytotoxins), and those that are highly toxic to animals and also affect plants. Saprophytic soil fungi form mostly toxin-antibiotics, while phytopathogenic fungi produce mainly phytotoxins. Work on toxins that affect primarily animals and humans and on the fungi from which they are derived was conducted to a large extent by Ukrainian scientists. Fungi that are toxic to humans and animals are generally saprophytic and develop in fodder, grains, and food products. They may also occur in the soil and in plant waste. It was previously shown by the author that toxins form in soil infected with Penicillium cyclopium and P. purpurogenum, while N. A. Krasil'nikov has established that antibiotics and toxins are

1/2

USSR

~~MIRCHINK, T. G.~~, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 5, 1970, pp 694-702

resorbed by plants from the soil. Toxins that form in the soil alter plant metabolism after being resorbed by them.

2/2

UDC 632.4.42/494/z

USSR

KRASIL'NIKOV, N. A., KHOIZHIBAYEVA, S. M., MIRCHINK, T. G., and ASKAROVA, S. A., Moscow State University

"Toxin Formation in Verticillium dahliae Strains Differing in Virulence"

Moscow, Sel'skokhozyaystvennaya Biologiya, No 2, 1971, pp 260-264

Abstract: Toxin was isolated from four groups of V. dahliae strains differing not only in morphological and biochemical properties, but also in virulence. The most virulent was group II, followed by groups III, IV, and I. The toxicity of the concentrates was tested by immersing cut cotton shoots in solutions of various dilutions. Toxin from group II wilted the plants in a 1:10,000 dilution, whereas the inhibiting effect of the other toxins was not manifested until 1:1000 and 1:100 dilutions were used. Thus, there is a relationship between the activity and virulence of the various groups of the agent of cotton wilt. V. dahliae toxin consists of several fractions, the most toxic being a cinnamon-brown pigment, which is produced by all four fungus groups.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--FUNGI ACCOMPANYING BACTERIA OXIDIZING MANGANESE -U-

AUTHOR--MIRCHINK, T.G., ZAPROMETOVA, K.M., ZVYAGINTSEV, D.G.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 379-383

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, BACTERIV, BIOLOGIC OXIDATION, MANGANESE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0371 STEP NO--UR/0220/70/039/002/0379/0383

CIRC ACCESSION NO--AP0100857

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100857

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHILE USING SOIL AGAR, 21 FUNGAL STRAINS, GROWING WITH MICROORGANISMS OF THE METALLOGENIUM GENUS, WERE ISOLATED FROM TURF PODZOL SOIL OF THE MOSCOW AND NOVGOROD REGIONS AS WELL AS OF THE ESTONIAN SSR. THESE FUNGI WERE REPRESENTED BY THE FOLLOWING SPECIES: CONIOTHIRIUM FUCKELLI, SAC. MYCOGONE NIGRA (MORGAN) JENSEN, FUSARIUM KUHNI (FUCK) SAC., ALTERNARIA GEOPHILA DASZ., CEPHALOSPORIUM SP. AS WELL AS BY THE FORMS OF STERILE MYCELIUM. HENCE, NOT ONE FUNGAL SPECIES BUT SEVERAL CAN BE SATELLITES OF METALLOGENIUM. THESE ARE WELL KNOWN FORMS BUT WITH SOME PECULIARITIES DUE TO COEXISTANCE WITH METALLOGENIUM.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 019

TITLE--USE OF SOME NUTRIENT MEDIA FOR THE ISOLATION OF SOIL FUNGI -U-

AUTHOR--MIRCHINK, T.G.

M

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (1), 123-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, SOIL MICROBIOLOGY, LACTIC ACID, STREPTOMYCIN, CELLULOSE, CULTURE MEDIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0447 STEP NO--UR/0325/70/000/001/0123/0128

CIRC ACCESSION NO--AP0116113

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 019

CIRC ACCESSION NO--AP0116113

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE BASIC MEDIA SUPPLEMENTED WITH DIFFERENT INHIBITORS (LACTIC ACID, BENGAL RED, STREPTOMYCIN) WERE TESTED FOR ISOLATION OF FUNGI FROM POOR AND RICH CULTIVATED SOIL. PENICILLIUM AND MUCOR GREW ON SUSLO AGAR, BUT NO OTHER GENERA DID. A MEDIUM WITH CM CELLULOSE WAS FAVORABLE FOR THE GROWTH OF FUNGI PRESENT IN SOIL PLANT RESIDUES, ESP. FUNGI OF THE FAMILY DEMATIACEAE. ON SOIL AGAR IT WAS POSSIBLE TO ISOLATE RARE FUNGI THAT GREW USUALLY TOGETHER WITH THE BACTERIUM METALLOGENIUM. FOR ISOLATION OF ALL FUNGI PRESENT IN A SOIL SAMPLE, IT IS NECESSARY TO USE AT LEAST 3 MEDIA WITH DIFFERENT SOURCES OF ORG. MATTER.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

ZUYEV, V. A., ISAYEVA, Ye. A., PETERS, V. V., and MIRCHINK, Ye. P., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences, USSR

"The Ability of the Viruses of Smallpox Vaccine and Fowl Plague of Birds to Form Plaques Under a Semiliquid Methylcellulose Cover"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, p 491

Translation: A cover medium containing methylcellulose was used to study the ability of vaccinia viruses and fowl plaque virus of birds to form plaques. After 48-72 hours of inocuation, the viruses form distinct macroplaques with a diameter of 1.5-2.5 mm. The method requires no concentrated media, is easy to perform, and yields reproducible results.

1/1

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 035

TITLE--IMPURITY PHOTOCONDUCTIVITY IN GALLIUM ARSENIDE CRYSTALS -U-

AUTHOR-(04)-KOLCHANOVA, N.M., MIRDZHALILOVA, M.A., NASLEDOV, D.N., IBRAGIMOV, V.YU.

COUNTRY OF INFO--USSR

M

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 358-60

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOCONDUCTIVITY, GALLIUM ARSENIDE SEMICONDUCTOR, SEMICONDUCTOR IMPURITY, OPTIC SPECTRUM, RADIATION INTENSITY, CHROMIUM, ELECTRON TRANSITION, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0085 STEP NO--UR/0449/70/004/002/0358/0360

CIRC ACCESSION NO--AP0105171

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 035

CIRC ACCESSION NO--AP0105171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPURITY PHOTOCOND., SIGMA SUBPH, OF CR DOPED GAAS WAS INVESTIGATED AT 77-300DEGREESK. THE MAX. AT 0.85 EV ON THE CURVE OF SPECTRAL DEPENDENCE OF SIGMA SUBPH BECOMES MORE DISTINCT AT LOWER TEMPS. THE POSITION OF THE MAX. CHANGES VERY SLIGHTLY WITH TEMP. THE CHARACTER OF THE DEPENDENCE OF SIGMA SUBPH ON INCIDENT PHOTON ENERGY AT 0.8-1.1 EV CANNOT BE EXPLAINED ONLY BY OPTICAL QUENCHING. IT IS POSSIBLE TAHT 2 STAGE PHONON ASSISTED TRANSITIONS TAKE PLACE IN THEPHOTOEXCITATION AT SIMILAR TO 0.85 EV, E.G. ELECTRON TRANSITIONS FROM THE CR ACCEPTOR LEVEL TO A SHALLOW DONOR LEVEL, WITH SUBSEQUENT THERMAL EXCITATION INTO THE CONDUCTION BAND.

FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TESTING A MODIFIED ALUMINA COBALT CHROMIA CATALYST IN HYDROCRACKING -U-

AUTHOR-(03)-ABIDOVA, M.F., SULTANOV, A.S., MIRDZHURAYEV, R.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 26-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--CATALYTIC CRACKING, METAL CATALYST, CALCIUM, ALUMINUM, COBALT, CHROMIUM, DIESEL FUEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2222 STEP NO--UR/0291/70/014/001/0026/0028

CIRC ACCESSION NO--AP0127584

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 021

CIRC ACCESSION NO--AP0127584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTRODUCING CA INTO AN AL CO CR CATALYST MAKES IT POSSIBLE TO PERFORM 1ST STAGE HYDROCRACKING OF VACUUM GAS OIL UNDER RELATIVELY MILD CONDITIONS, WITH HIGH SELECTIVITY FOR THE DIESEL FUEL FRACTION.

UNCLASSIFIED

USSR

4

VINOKUROV, V. G., DIMITRIYEV, Yu. K., YEVREINOV, E. V., KOSTELYANSKIY, V. M., LEKHNOVA, G. M., MIRENKOV, N. N., REZANOV, V. V., KHOROSHEVSKIY, V. G.

"A Homogeneous Computer System of Minicomputers"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 51, Novosibirsk, 1972, pp 127-145 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V600, by the authors).

Translation: The expediency is demonstrated of constructing homogeneous computer systems (HCS) of minicomputers. A two-dimensional computer system, the MINIMAKS is described. The elementary machines of this system are based on ASVT-M modules. The composition of typical HCS software is presented. 20 biblio. refs.

1/1

UDC 681.3.06:51

USSR

KONSTANTINOV, V. I., MIRENKOV, N. N.

"Functioning of a Homogeneous Computer System with a Priority Stream of Large Problems"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 42, Novosibirsk, 1970, pp 47-58, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V794 by V. Mikheyev).

Translation: The operation of a multimachine homogeneous computer system (HCS) in the mode of one stream of problems is studied. One peculiarity of the functioning of the system is that each problem can request for its solution any number of machines and machine servicing is begun and ended in groups. A problem is considered large if its rank is greater than 1/2, otherwise it is considered small (1 is the number of machines in the system). Small problems are assumed at lower priority and are accumulated in a long line. First, analytic study of the operation of the system in the mode of a flow of large problems is performed, then the actions of the monitor to solve small problems using only free machines are studied.

1/1

UDC 681.3.06:51

USSR

MIRENKOV, N. N.

"Planning Algorithms for the Monitor of a Homogeneous Computer System"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 42, Novosibirsk, 1970, pp 34-46, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V793 by V. Mikheyev).

Translation: The following problems are studied:

Problem 1. A homogeneous computer system (HCS) consisting of l elementary machines operates in the long line mode for problems of all ranks, the time of solution of each of which is arbitrary. It is required to service this line while fully unloading the system so that during time interval T problems of all ranks receive identical time for their solution. The solution of this problem is achieved using a special selection of sequences of functional states and operating times of the system in each state.

Problem 2. N jobs have been received for servicing in the HCS. The time of solution and rank of each are known. The problem is to distribute them among the machines and times so that the entire set is serviced in the minimum possible time. This problem is solved by an integer programming method.

Problem 3. Plan the realization of a fixed set of problems if only the total time of solution of the problems of each rank is known. No limitations on the structure of the set are given.

1/2