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UDC: 669.15-155:620.178.162

GOVOROV, A. A., REPINA, I. D., and MUROMISEVA, V. N.

"Influence of Ball Hardening on the Wear-Resistance of Type-30KhGT Nitrocemented Steel"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 117-119

Abstract: Ball working of nitrocemented specimens of 30KhGT steel under a pressure of 75-200 kg increases wear resistance under conditions of dry rolling friction. If there are large carbonitrides in the structure, this treatment decreases wear resistance. Roughness of the surface is significantly improved by this treatment. Five illustrations; four biblio. refs.

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USSR

UDC 669.15-194.2.017

BUNIN, K. P., MARTSINIV, B. F., REPINA, N. I., and YATSENKO, A. I.,
Institute of Ferrous Metallurgy

"Structure and Chemical Microheterogeneities of Cast Low-Carbon Iron Alloys
During the δ (σ) \rightleftharpoons -Transformation"

Kiev, Metallofizika, No 40, 1972, pp 90-95

Abstract: The structural features and chemical microheterogeneity were investigated for cast iron-carbon alloys with 0.05-0.15% C and alloyed with Si, Al, Cr, Cu, Mn, and Mo. The direct segregation of alloying elements into deltadendrites was shown by micro-x-ray spectral analysis. In the delta-gamma transformation process the growth of austenite occurs in the form of orderly oriented plates, similar to the transformation during heating. The formation of austenite is accompanied by depletion of Si, Al, and Mo and a weak enrichment of Ni, Cu, and Mn. In alloys being tested for a double delta-gamma-alpha transformation, orderly oriented blocks inside the ferrite appeared. 4 figures, 1 table, 27 bibliographic references.

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Analysis and Testing

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UDC 669.7.017:620.186.4

BOCHVAR, O. S., REPINA, L. P., and ARSENOVA, T. N., Moscow Aviation Technological Institute, Chair of the Science of Metals and of the Technology of Heat Treatment

"Features of the Microstructure of Plastic Deformation and Recrystallization of an Aluminum Alloy with Various Heterophasing"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, "Tsvetnaya Metallurgiya, No 3, 1973, pp 145-146

Abstract: A study was made of the microstructure of two complexly alloyed aluminum alloys of the Al-Cu-Li-Mn-Cd system after plastic deformation. The alloys contained (in wt%): Cu 5.02 & 4.92, Li 1.21 & 0.94, Mn 0.6 & 0.55, Cd 0.14 & 0.11, and Al the rest, respectively; they were homogenized at 510° for 24 hrs and deformed at 490° by axial compression. The effect of the heterophase condition of the structure on the development of plastic deformation was investigated. The plastic deformation of specimens of the second alloy is realized mainly by twinning. The large twins developing in the process of hot deformation propagate up to grain boundaries. The microstructures of specimens of the first alloy demonstrate the changes in the recrystallized structure determined by the correlation of deformation mechanisms. The recrystallized

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BOCHVAR, O. S., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 3, 1973, pp 145-146

structure is distinguished both by grain size and by the number of twinned interlayers and annealing twins. Four figures, and one table.

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USSR

REPINSKIY, S. M., DEVYATOVA, S. F.

"Temperature Dependence of Dissolution of Semiconductor as a Process Including Adsorption Equilibrium"

Temperaturnaya Zavisimost' Rastvoreniya Poluprovodnika kak Protsessa, Vkluyuchayushchego Adsorbtsionnoye Ravnovesiye [English Version Above], Moscow, 1971, 7 pages (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1396 Dep. by the author's).

Translation: The dissolution of a semiconductor is studied as a process of desorption of the reaction products; the preexponential factor in the kinetic equation is determined by the adsorption isotherm of the oxidizer molecules. It is demonstrated that the effective activation energy of the process at low oxidizer concentrations has a lower value than at high concentrations, by the heat of adsorption of the oxidizer molecules. The ratio of the preexponential factors is equal to the ratio of the statistical sums of the states of the oxidizer particles adsorbed and in solution.

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Acc. Nr: AP0037847

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Raf. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 169-174

PRESSURE DEPENDENCE OF THE MAGNETIZATION
OF IRON AT ZERO TEMPERATURE

Renke, G.

The relation between magnetism and chemical bonding and in particular the appearance of atomic moment and their dependence on pressure are investigated on basis of the model of a gas of interacting electrons (Thomas — Fermi model). Only a perfect crystal at $T = 0^\circ$ is considered. In a rough approximation the charge and spin density within the Wigner — Seitz cell are assumed to be spherically-symmetric.

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ELECTRONICS
Amplifiers

UDC: 621.375.73

GOL'DIN, S. M. (Deceased) and REPINSKIY, V. N.

"Phase-Amplitude and Amplitude Characteristics of a Regenerative Parametric Amplifier"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1114-1121

Abstract: This paper investigates the regenerative parametric amplifier with a strong input signal, and derives a formula for the phase-amplitude characteristic of the circuit. The effect of varactor nonlinearity on the amplitude characteristic of the regenerative parametric amplifier is also investigated. An expression for the amplitude characteristic of the parametric amplifier, obtained in an earlier publication (V. S. Etkin, et al, Parametricheskiye sistemy na poluprovodnikovyykh diodakh -- Parametric Systems Using Semiconductor Diodes -- Izd-vo "Sovetskoye radio," 1964) is made more accurate in the present paper by taking into account the detuning change with variations in signal amplitude. It is found that the shift in resonant frequency of the amplifier tuned circuit with a change in signal amplitude leads to an increase or decrease in absorption power of the regenerative parametric amplifier depending on the initial detuning of the circuit.

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Acc. Nr.: AM 6106707

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Ref. Code: UR 0000

Sheyenko, I. N.; Oreshkin, V. D.; Repkin, Yu. D.

Contemporary Build-Up Materials Based on Refractory Compounds (Sovermennyye naplavochnyye materialy na osnove tugoplavkikh soyedineniy) Kiev, Naukova Dumka, 1970, 235 pp (SL:2078)

TABLE OF CONTENTS:

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19890025

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Acc. Nr.: AMC106707

Conclusion
Bibliography

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228

The book deals with theoretical principles and characteristics of the build-up process...
- It was written for a wide circle of engineers, technicians and scientists specializing in the field of welding and surfacing in machine construction, ship building, agriculture and construction; it can be useful also to students.

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UDC 576.895.421.095.6.07

~~REPETINA, I. V.~~, Entomological Division, Institute of Medical Parasitology and Tropical Medicine ineni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"Some Additions to the Method of Determining the Physiological Age of Ixodes Ticks (on the Example of Ixodes persulcatus P. Sch. in Western Sayan)"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 1, Jan/Feb 71, pp 62-67

Abstract: Yu. S. Balashov previously proposed a method for determining the physiological age of Ixodes ticks by distinguishing four degrees of nutritional depletion (Zool. Zh., Vol 40, No 9, p 1,354, 1961). This method, with some modifications, was used to study the distribution among age groups of hungry females in the natural population of Ixodes persulcatus ticks in Western Sayan. The work was conducted by the anti-epidemic detachment from the Medical Parasitology Institute at the construction of the Sayan-Shushensk Hydroelectric Station. Age determinations were carried out on the basis of the size and shape of digestive cells and the content of hemoglobin and hematin in these cells. The content of hemoglobin and hematin was regarded as a characteristic of

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REPKINA, L. V., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,
Vol 40, No 1, Jan/Feb 71, pp 62-67

secondary importance, because the natural population of *I. persulcatus* in Western Sayan is distinguished by a low content of reserve nutrients. The degree of loading of Malpighian vessels, which was proposed as one of the criteria by Balashov, was not considered in determinations, because guanine dissolved on fixation with Bouin's and Souza's mixtures, so that these vessels always appeared empty. By applying the method described, it was possible to distinguish between eight age groups as compared with four by the unmodified method proposed by Balashov.

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USSR

UDC: 629.1.054.6

REPNIKOV, A. V., Moscow "Order of Lenin" Aviation Institute imeni Sergo Ordzhonikidze

"A Method of Setting the Main Axis of a Gyrocompass on the Meridian"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 5, Feb 73, Author's Certificate No 364844, Division G, filed 20 Nov 70, published 28 Dec 72, p 122

Translation: This Author's Certificate introduces a method of setting the main axis of a gyrocompass on the meridian by changing the angle of rise of the main axis of the gyrocompass above the plane of the horizon and applying piecewise-constant correcting torques to the sensing element of the gyrocompass. As a distinguishing feature of the patent, the setting time is reduced by measuring the instantaneous extremum of the angle of rise of the main axis of the gyrocompass above the plane of the horizon which corresponds to the position of the axis of the sensing element in the plane of the meridian and changing the direction of the correcting torque when the output angle of the gyrocompass coincides with the switching angle determined by the function of its correspondence with the extremum angle of rise of the sensing element above the plane of the horizon.

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USSR

UDC 621.382.002

FEDOTOV, YA.A., MADOYAN, S.G., AVETISYAN, G.KH., MANAGAROV, V.D., REPNIKOV, G.I.

"Properties Of p^+ Ge-nGaAs Structure Prepared By The Liquid Epitaxy Method"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 31-38 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B379)

Translation: The optimum conditions were determined for the growth of high-quality layers of Ge on GaAs by the liquid epitaxy method (from a solution in Ge). The optimum supercooling of the solution for preparing ideal layers was calculated. (It was found to be $\sim 15^\circ$ C.) The calculation was confirmed by experiment. With supercoolings above 50° C the perfection of the layers sharply deteriorated. Heterojunctions of p^+ Ge--nGaAs were prepared without intermediate layers of the solid solution Ge + GaAs and without a "false" junction at the interface resulting from diffusion of arsenic in the Ge. 9 ref. Ye.G.

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REPRINT SEVA, S.M.

JPRS 58046
23 January 1973

UDC 615.014.2:66.027.5

PROTOTYPE OF A CONTINUOUS DRYER DEVELOPED BY THE ITRD,
ACADEMY OF SCIENCES BELORUSSIAN SSR

Article by S. V. Fedorovich, S. M. Korotkiy, K. G. Chilik, P. N. Mironov and G. A. Gerasimovich of the Institute of Heat and Mass Transfer (ITRD), Minsk, the Kharkov Chemical and Pharmaceutical Scientific Research Institute, and the Kharkov Chemical and Pharmaceutical Plant "Zdorov'ye trudyashchimykh" (Khar'kov, ENAKO-Grauzovychenkiy Zhurnal, Russian, no 11, 1972, pp 51-55).

The Institute of Heat and Mass Transfer of the Academy of Sciences Belorussian SSR has developed a continuous method of drying pharmaceutical chemical preparations. The method consists in having the moist granulation and drying in a falling and fluidized bed be accomplished in a single apparatus. This makes the process continuous and also permits curtailing losses of material to a minimum, improving the quality of output, accelerating the process of granulation and drying by tens of times, reducing production areas and creating normal conditions for the work. On the basis of that method, optimum drying conditions have been worked out and a prototype of the equipment has been made which has undergone industrial tests at the Chemical and Pharmaceutical Plant "Zdorov'ye trudyashchimykh" in Kharkov.

The figure presents a schematic diagram of the drying apparatus. It consists of a granulator (2), drying chamber (1), air heater (5), blower (4), cyclone (3), bucket chain and a control panel. The drying chamber is a vertical pipe 400 mm in diameter with an expanded separator section. The vertical part of the dryer is 1500 mm high. In the lower part is a perforated grid on which the material being dried is fluidized. In the separator part of the dryer is a granulator, which is a cylinder with a perforated bottom. The diameter of the openings can be adapted, depending of the required granulometric composition of the material being dried. In the given case the opening diameter is 2 mm. Screw blades serve as a distributor. On the lower side

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UDC 612.8.015

BULYGIN, I. A., and REPRINTSEVA, V. M., Institute of Physiology, Belorussian Academy of Sciences

"Shifts in Serotonin Content of the Caudal Mesenteric Ganglion After Centripetal and Centrifugal Stimulation"

Minsk, Doklady Akademii Nauk BSSR, No 7, 1971, pp 649-651

Abstract: Ten minutes' electrical stimulation (current 5 v) of the lumbar splanchnic nerves in dogs (centrifugal stimulation) resulted in a significant increase in the serotonin content of the caudal mesenteric ganglion, whereas stimulation (current 14 v) of the central end of the hypogastric nerve (centripetal stimulation) for the same length of time significantly decreased the serotonin content of the ganglion. Possible mechanisms of these shifts are discussed.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--VARIATIONS IN THE CATECHOL AMINE LEVEL IN SEPARATE PARTS OF RAT
BRAIN UNDER THE INFLUENCE OF INTERO AND EXTEROCEPTIVE ACTIONS -U-

AUTHOR--(02)-BULYGIN, I.A., REPRINTSEVA, V.M.

R

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (1),
54-9

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATECHOLAMINE, RAT, BRAIN, ADRENALINE, NORADRENALIN

CONTROL MARKING--NO RESTRICTIONS

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STEP NO--UR/0440/70/000/001/0054/0059

CIRC ACCESSION NO--AP0121184

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADRENALINE (I) AND NORADRENALINE (II) CONTENT OF BRAIN PARTS WAS DETD. IN RATS FOLLOWING EXTEROCEPTIVE (PRESSURE ON THE SKIN) AND INTEROCEPTIVE (DISTENSION OF RECTUM) STIMULATION. NO I WAS FOUND IN THE BRAIN. IN CONTROL ANIMALS, HIGHEST II LEVEL (IN MU G-G) WAS IN HYPOTHALAMUS (0.931) AND LOWEST IN CORTEX (0.349) AND CEREBELLUM (0.371). EXTEROCEPTIVE STIMULATION LOWERED II CONTENT OF HYPOTHALAMUS (0.691), WHILE IN OTHER BRAIN PARTS IT REMAINED UNCHANGED. FOLLOWING INTEROCEPTIVE STIMULATION, A DROP IN II LEVEL OF CORTEX WAS OBSD. (0.212). SECTIONING OF THE SPINAL CORD INCREASED II LEVEL IN ALL BRAIN PARTS WITH EXCEPTION OF STRIATUM. IN THESE ANIMALS INTEROCEPTIVE STIMULATION INCREASED II LEVEL IN STRIATUM, WHILE EXTEROCEPTIVE STIMULATION LOWERED ITS LEVEL IN CEREBELLUM AND MIDBRAIN. ADMINISTRATION OF AMINAZIN CAUSED A DECREASE IN II LEVELS IN MEDULLA, MIDBRAIN, AND HYPOTHALAMUS (5 MG-KG) WHILE A HIGHER DOSE (20 MG-KG) DECREASED II CONTENT IN CORTEX, HYPOTHALAMUS, STRIATUM, AND MIDBRAIN. FOLLOWING PRETREATMENT WITH AMINAZIN, EXTEROCEPTIVE STIMULATION LOWERED II LEVEL OF CORTEX AND HYPOTHALAMUS, WHILE A DECREASE WAS SEEN IN MEDULLA AND HYPOTHALAMUS FOLLOWING INTEROCEPTIVE STIMULATION.

FACILITY: INST. FIZIOL., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 539.293:538.632

ZAVISTANAVICHYUTE, V., REPSHAS, K.

"Electron Thermomagnetic Effect in Germanium"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, Vol XIII, No 2, 1973, pp 255-259

Abstract: An experimental study was made of the emf occurring in samples made of n- and p-type germanium at room temperature under the simultaneous effect of microwaves and an external magnetic field. A qualitative explanation is offered for the causes of this emf.

Experimental curves showing the absolute magnitude of the emf as a function of the intensity of the magnetic field at various microwave powers are given. The signs of the emf are opposite for the n and p germanium samples. In weak magnetic fields a significant increase in the emf is observed with an increase in the magnetic field intensity, and in stronger fields the growth rate of the emf decreases. This is especially noticeable in p-type germanium. The Hall effect is used in explaining the observed phenomena.

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USSR

UDC [537.226+537.311.33]:[537+535]

VALKYAVICHYUS, R. A., KROTKIJS, A. I., and REPSHAS, K. K.

"Transverse Magnetoresistance in n-Ge in Strong Electric Fields"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 247-252 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE734 by authors)

Translation: The authors present and explain theoretically the experimental results of a study of transverse magnetoresistance of n-type Ge as a function of electric field intensity at the temperature of liquid nitrogen in the case in which $j \parallel \langle 111 \rangle$ and the magnetic field is perpendicular to the (110) plane of the specimen.

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USSR

UDC [537.226+537.311.33]:[537+535]

DENENE, M. V., and ~~REPSHAS, K. K.~~

"Study of the Hall Parity Effect in n-Type Germanium"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 239-242 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE736 by authors)

Translation: The article presents experimental results of a study of the Hall quadratic effect as a function of magnetic field intensity for various current directions relative to the crystallographic (100) axis at room temperature. Experiments were conducted for the case in which the current is in the (110) plane and $H \perp (110)$. Measurement results are contrasted with theoretical results, calculated on the basis of the Boltzmann equation in approximation of isotropic scattering.

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USSR

UDC [537.226+537.311.33]:[537+535]

ASHMONTAS, S. P., POZHELA, YU. K., and REPSHAS, K. K.

"Bigradient Electromotive Force of Hot Current Carriers"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 243-245 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE757 by authors)

Translation: The article presents experimental results of the investigation of the bigradient electromotive force of hot current carriers: i.e., the electromotive force appearing in a homogeneous semiconductor specimen on the creation therein of two different gradients of the warming electric field. Such warming up was brought about by the special shape of the specimen. Investigations were conducted on n-Ge specimens at room temperature by the microwave method and the d-c pulse method. The authors obtained the dependence of the bigradient electromotive force of hot current carriers on the strength of the electric microwave field in a wave guide.

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USSR

UDC: [537.226+537.311.33]: [537+535]

ASHMONTAS, S. P., POZHBLA, Yu. K., and REPSHAS, K. K.

"Photogradient EMF of Thermal Current Carriers in Germanium and Silicon"

Lit. fiz. sb. (Lithuanian Physics Collection) No. 3, vol. 11, 1971, pp 451-456 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1139)

Translation: The results are given of an investigation into the photogradient emf of thermal current carriers in Ge (n and p type) and Si (n type) at $T_0 = 300^\circ \text{K}$. In the case of n-Ge, a reduction was experimentally observed in the growth rate of the photogradient emf with the electric field intensity, beginning with fields of $E > 5000 \text{ V/cm}$, which fact is explained by the effect of the non-equivalent $\langle 100 \rangle$ valleys on the electron heating. Computations of the photogradient emf were made with approximate electron and hole temperatures computed from equations of energy balance.

Author's abstract

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UDC[537.226+537.311.33]:[537+535]

BAREYKIS, V. A., GUGGA, V. I., MATULENENE, I. B., POZHELA, YU. K., and
~~REPSHIS, V. I.~~

"Investigation of the Warming-Up of Current Carriers in Nonrectifying Point Contact"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 1, pp 73-79 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE666 from summary)

Translation: The authors measured noise temperature and thermoelectromotive force of hot holes as a function of bias voltage for p-Ga specimens with nonrectifying point contact at room temperature. It is shown that in the point contact the electric field warms the current carriers. For a bulk specimen values of noise temperature for point contact were compared with noise temperature as well as with carrier temperature determined according to thermoelectromotive force measurements.

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USSR

STOGNIY, A. A., REP'YEV, Yu. M.

"Experience in Development of a Standard Enterprise Automated Control System"

Kibernet. i Vychisl. Tekhn. Resp. Mezhd. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1971, No 12, pp 19-40 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V665, by the authors).

Translation: Certain peculiarities of a standard enterprise automated control system are studied and recommendations are given for their use in the introduction of systems to enterprises.

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UDC: 681.3

STOGNIY, A. A., REP'YEV, Yu. M.

"Experience in Developing a Standard Automated Enterprise Management System"

Kiev, Kibernetika i Vychislitel'naya Tekhnika, Resp. mezhved. sb., No 12, 1971, pp 19-40

Abstract: The paper examines various aspects of automated enterprise management systems and presents recommendations for developing a standardized system of enterprise management. Such a management system is understood to mean an aggregate of procedures and technical facilities providing maximum efficiency in handling enterprise management based on using the methods of mathematical economics and data processing equipment including computer technology and facilities for gathering, recording, transmitting, and storing information. The problems and goals of the system are reviewed, together with basic principles of operation and their realization. Separate sections deal with various subsystems for controlling the technical preparation of production, managing main and auxiliary production, controlling the supply of technical materials, technical and economic planning, and also bookkeeping and accounting. Hardware and software are discussed.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--METHOD OF LOCAL CONSTRUCTION OF INVARIANT SUBSPACES IN THE SPACE OF SOLUTIONS OF THE CHEW, LOW TYPE EQUATIONS -U-
AUTHOR--(02)-MESHCHERYAKOV, V.A., RERIKH, K.V.

R

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 1, PP 78-93

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--NONLINEAR SYSTEM, FUNCTIONAL EQUATION, S MATRIX, MATHEMATIC SPACE, MATHEMATIC TRANSFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1008

STEP NO--UR/0646/70/003/001/0078/0093

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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--A0130047
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE NONLINEAR SYSTEM OF FUNCTIONAL EQUATIONS FOR THE MATRIX ELEMENTS OF THE S MATRIX IS FORMULATED ON THE BASIS OF THE CHEW LOW EQUATIONS. THE LINEARIZATION OF THE UNITARITY CONDITIONS AND THE TRANSITION TO PROJECTIVE COORDINATES IN THE SPACE OF THE S MATRIX ELEMENTS ARE PERFORMED. USING THE GEOMETRICAL INTERPRETATION OF THE SYSTEM OF FUNCTIONAL EQUATIONS AS A TRANSFORMATION IN THE (N-1) DIMENSIONAL REAL SPACE IT IS SHOWN THAT SOME OF THE SOLUTIONS OF THE INITIAL SYSTEM OF EQUATIONS ARE CONTAINED ON THE INVARIANT HYPERSURFACES OF THIS SPACE. A METHOD OF THE LOCAL CONSTRUCTION OF THE INVARIANT SUBSPACES IS PROPOSED, WHICH IS APPLIED TO THE CHEW LOW EQUATIONS WITH THE 3 TIMES 3 AND 4 TIMES 4 CROSSING MATRICES. IT IS ESTABLISHED THAT IF THE CHEW LOW EQUATIONS POSSESS A SOLUTION, THEN THE ARBITRARINESS OF THE SOLUTIONS OF THE CLASS UNDER CONSIDERATION, BEING THE GENERALIZATION OF THE FAMILAR BETA ARBITRARINESS, IS NOT EXHAUSTIVE.

INSTITUT YADERNYKH ISSLEDOVANIY. FACILITY: OB'YEDINENNY

UNCLASSIFIED

USSR

UDC 621.382.2

VENDIK, I. B., and RESH, Ye. A.

"Distribution of the Concentration of Carriers in Middle Region of P-I-N Diode in a Microwave Nonlinear Regime"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of the Leningrad Electrical Engineering Institute), 1971, Issue 92, pp 64-67 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B191)

Translation: The solution of a non-stationary diffusion equation describing the distribution of the concentration of carriers in the i-layer, with which modulation of conductance in a p-i-n semiconductor diode is connected, is presented with the aid of Bessel functions. A calculation of the distribution of concentrations of excess carriers in the i-region, conducted with the aid of a "Minsk-22" computer, shows that in the frequency range to 100 MHz, as a result of the inertia of the diffusion process in the middle i-region, a delay takes place in the change of concentration as compared with the boundaries and as a result a charge buildup takes place. The process in question depends on the lifetime of the carriers (τ), the width of the i-region (W), and the frequency and amplitude of the signal. With a decrease of τ , the charge buildup in the medium i-region is decreased and a change of the carrier concentration in time is only expected close to the junctions. This same effect should appear with an increase of the frequency and W . With an increase of the

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VENDIK, I. B., and RESH, Ye. A., Izv. Leningr. elektrotekhn. in-ta (Bulletin of the Leningrad Electrical Engineering Institute), 1971, Issue 92, pp 64-67 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B191)

frequency and T , the charge in the i-region has no time to be resorbed during the time of the negative half-cycle which leads to a reduction of the resistance of a p-i-n semiconductor diode. 7 ill. V.S.

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USSR

UDC 612.84.014.46:547.262

KOSTANDOV, E. A., and RESHCHIKOVA, T. N., Laboratory of the Pathophysiology of Higher Nervous Activity, Central Scientific Research Institute of Legal Psychiatry imeni V. P. Serbskiy

"Changes in Visual Perception Under the Influence of Alcohol"

Moscow, Zhurnal Nevropatologii i Psikhiiatrii imeni S. S. Korsakov, Vol. 73, Vyp 2, 1973, pp 230-235

Abstract: Differences in perception time of Russian letters flashed onto a screen were studied for normal individuals and chronic abusers of alcohol who had abstained 1 1/2-2 1/2 weeks prior to the study. Average perception times were about 104 msec for normal individuals and 124 msec for chronic abusers. Perception time did not change significantly for either normal individuals or chronic abusers 15 min after consumption of 60 ml 40% alcohol. After consumption of 200 ml 40% alcohol the perception times increased to about 160 msec for normal individuals and 146 msec for chronic abusers. Significant scatter was noted in perception times for chronic abusers. Thus although the initial perception time of chronic abusers is higher than that of normal individuals, alcohol consumption does not affect them as greatly as the latter. Neurophysiological aspects of such changes are discussed, but no conclusions are
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USSR

KOSTANDOV, E. A. and RESHCHIKOVA, T. N., Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakov, Vol 73, Vyp 2, 1973, pp 230-235

made due to lack of information on specific nervous mechanisms behind this phenomenon.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--HARMONICS IN NONLINEAR SYSTEMS UNDER FORCED OSCILLATIONS -U-
AUTHOR--RESHETILOV, A.R. *R*
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 2, PP 165-167
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--AUTOMATIC CONTROL DESIGN, HARMONIC OSCILLATION, NEGATIVE
FEEDBACK, NONLINEAR SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1967 STEP NO--UR/0103/70/000/002/0165/0167
CIRC ACCESSION NO--AP0054765
UNCLASSIFIED

PROCESSING DATE--16OCT70

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--A0054765

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

ABSTRACT. A METHOD OF DESIGNING HARMONICS WITH TAKING INTO ACCOUNT THE INFLUENCE OF THE POSITIVE OR THE NEGATIVE REACTION FROM THE OUTPUT TO THE INPUT OF THE SYSTEM IS SUGGESTED ON THE BASIS OF THE ANALYSIS OF THE PROCESSES OF THE ORIGIN AND THE TRANSFORMATION OF HARMONICS. THE HARMONICS ORIGINATING ON THE NONLINEARITY AS A RESULT OF THE TRANSFORMATION OF THE MAIN FORCED OSCILLATION ARE SEPARATELY SINGLED OUT, THEIR MOVEMENT ALONG THE FEEDBACK CIRCUIT IS SHOWN, THE CONDITIONS OF THEIR COMMON SUMMATION OR SUBTRACTION ARE SUBSTANTIATED, THE ESTIMATION OF HARMONICS OF VARIOUS FREQUENCIES FOR PRACTICAL CASES WHEN IT IS POSSIBLE TO DISREGARD THEIR INTERACTION ON NONLINEARITIES IS SUGGESTED.

UNCLASSIFIED

1/3 050 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANISM OF THE IGNITION AND QUENCHING OF ZNS-FE(CL) LUMINOPHORS
-U-
AUTHOR-(02)-RESHETINA, T.S., TUNITSKAYA, V.F.
COUNTRY OF INFO--USSR *R*
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 295-300
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LUMINESCENCE QUENCHING, ZINC SULFIDE, IR RADIATION, EXCITATION
ENERGY, RADIATION INTENSITY, ELECTRON TRAP, TEMPERATURE DEPENDENCE,
LUMINESCENCE SPECTRUM, ELECTRON TRANSITION, FERRIC CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1003 STEP NO--UR/0368/70/012/002/0295/0300
CIRC ACCESSION NO--AP0107522
UNCLASSIFIED

2/3 050

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0107522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF THE IR RADIATION INDUCED IGNITION AND QUENCHING OF LUMINESCENCE OF ZNS-FE(CL) PHOSPHORS WAS STUDIED TO VERIFY THE EARLIER CONCLUSION OF THE EXISTENCE OF "ACTIVE" LEVELS RESPONSIBLE FOR THE LUMINESCENCE "IGNITION" (E. YA. ARAPOVA, V. L. LEVSHIN, N. V. MITROFANOVA, T. S. RESHETINA, V. F. TUNITSKAYA, AND V. V. SHCHAENKO, 1966) AND TO OBTAIN NEW INFORMATION ON THE SENSITIVITY OF THE PHOSPHORS TO IR RADIATION AT 1.2-1.3 MU. THE INTENSITY OF THE LUMINESCENCE WAS STUDIED AS A FUNCTION OF TEMP. (77-250DEGREESK) AND THE ACTIVATOR (FE) CONC. ((10-5) TIMES 10 PRIME NEGATIVE6 G-G). THE DEPTH OF THE ELECTRON LEVELS WAS DETD. FROM THE TEMP. DEPENDENCE CURVES. THE AV. DEPTH OF ELECTRON TRAPS RESPONSIBLE FOR THE IR RADIATION INDUCED (AT 2.5 MU) LUMINESCENCE IGNITION IS 0.06 EV, AND THE TRAPS RESPONSIBLE FOR THE IR RADIATION INDUCED IGNITION AT SMALLER THAN OR EQUAL TO 1.5 MU ARE LOCATED 0.06 AND 0.25 EV FROM THE CONDUCTION BAND. DATA ON THE ACTIVATOR CONC. DEPENDENCE OF THE LUMINESCENCE IGNITION ON IR (GREATER THAN 2 MU) RADIATION REVEALED THAT THE ADDN. OF FECL SUB3 PROMOTED THE IGNITION AND AFFECTED THE COMPN. OF THE SHORT WAVELENGTH REGION OF THE IR RADIATION INDUCED LUMINESCENCE SPECTRUM. THE INTENSITY OF THE LUMINESCENCE INDUCED BY IR RADIATION AT SMALLER THAN 2 MU DECREASES WITH INCREASING CONC. OF THE ACTIVATOR.

UNCLASSIFIED

3/3 050

CIRC ACCESSION NO--AP0107522

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--THE STIMULATION OF THE LUMINESCENCE OF ZNS-FE(CL) PHOSPHORS BY IR RADIATION IS ATTRIBUTED TO THE TRANSITION OF ELECTRONS FROM THE TRAPS TO THE CONDUCTION BAND AND THE QUENCHING IS ATTRIBUTED TO THE TRANSITION OF HOLES FROM THE LUMINESCENCE CENTERS TO OTHER CENTERS (EMISSION OR QUENCHING) VIA THE VALENCE BAND.

UNCLASSIFIED

USSR

UDC 538.4

5

BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K.,
RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R.,
YANTOVSKIY, Ye. I.

"Experimental Study of Liquid-Metal Induction Machine in Pump Mode"

7-ye Soveshch. po Magnit. Gidrodinamike. T. 1 [Seventh Conference on Magnetic Hydrodynamics, Vol 1], Riga, Zinatnye Press, 1972, pp 20-23, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B43 by V. V. Blagov).

Translation: The operation of a liquid-metal induction machine in the pump mode was studied in a potassium circuit with a working pressure of up to 60 kg/cm². The working characteristics of the machine are presented for a temperature of 500°.

The experimental results allowed the relationship of the dimensionless criterion $\Pi = \Delta P V_s / \sigma U^2$ to the velocity ratio $V/V_s = 1 - S$ to be established (where V_s is the synchronous speed of the rotating field, V is the velocity of the metal, ΔP is the pressure drop developed, S is the slipping, σ is the conductivity, U is the applied voltage). As the temperature changes from 1/2

USSR

UDC 538.4

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BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K.,
RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R.,
YANTOVSKIY, Ye. I., 7-ye Soveshch. po Magnit. Gidrodinamike. T. 1, Riga,
Zinatnye Press, 1972, pp 20-23.

280 to 500° and the voltage varies from 80 to 150 v, the dependence of Π on V/V_s is universal. The maximum head is produced at small flow rates, depends on the applied voltage and where $T = 500^\circ$ and $\Delta U = 150$ v is about 37 kg/cm²; the efficiency of the machine is about 24% under these conditions. Where $T = 300^\circ$, these figures are 42 and 30% respectively. The total operating time of the machine was 120 hours.

2/2

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Acc. Nr:

AP0037245

Ref. Code: UR 0301

PRIMARY SOURCE: *R* Voprosy Meditsinskoy Khimii, 1970, Vol 16,
Nr 1, pp 95-98

HAPTOGLOBIN METABOLISM AT THE ANTISEPTIC INFLAMMATORY PROCESS

V. M. Rodionov, A. V. Pospelova, Yu. P. Reshetko, T. G. Kulakova

Institute of Biological and Medical Chemistry USSR Academy of Medical Sciences,
Moscow

Haptoglobin metabolism in control dogs and at the antiseptic inflammatory process induced by subcutaneous terpineol oil administration has been studied. Dogs were injected with haptoglobin ¹²⁵I and changes in total radioactivity of the animal, blood serum label excretion, the volume of circulating plasma, and serum haptoglobin concentration were registered. In the period of inflammatory focus development the rearrangements of haptoglobin from blood into tissue, decreases in the rate of its catabolism and increase in its synthesis took place.

D. A.

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REEL/FRAME
19730172

2

1/2 015
UNCLASSIFIED
TITLE--CALCULATION OF EXTRACTION ISOTHERMS TAKING INTO ACCOUNG ANY CHANGE
IN PHASE VOLUMES -U-
AUTHOR--(02)-ROZEN, A.M., RESHETKO, YU.V.
PROCESSING DATE--16OCT70
COUNTRY OF INFO--USSR
SOURCE--RADIUKHIMIYA 1970, 12(1), 3-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOSPHATE, SOLVENT EXTRACTION, URANIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0884
STEP NO--UR/0186/70/012/001/0003/0012
CIRC ACCESSION NO--AP0118053
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118053

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCN. METHODS (FOR EXTN. ISOTHERMS) WHICH TAKE INTO ACCOUNT THE CHANGES IN VOL., IN CASES IN WHICH THE CONCNS. ARE GIVEN IN MOLAR OR MOLAL UNITS, ARE DESCRIBED IN DETAIL. RECALCN. OF DATA FROM THE LITERATURE SHOWS THAT THE SAME EQUATIONS THAT HAVE BEEN USED FOR MOLAR CONCNS. APPLY ALSO TO MOLAL CONCNS., BUT THE EXTN. CONSTS. MUST BE CHANGED. THE RECALCN. OF EXTN. CONSTS. FOR THE EXTN. OF U FROM HNO SUB3 SOLNS. BY BU SUB3 PO SUB4 IS TREATED AS AN ILLUSTRATIVE EXAMPLE.

UNCLASSIFIED

KESHETNIKOV, N.A.

PRODUCTION OF HIGHLY TEXTURIZED PERMANENT MAGNETS
FROM MAGNETICALLY ANISOTROPIC POWDERS

Article by Y. V. Shchur, L. M. Magat, A. S. Yermolanko, N. A. Keshetnikov, V. G. Avdeyev, A. V. Derjagin, V. S. Bovidin, A. V. Panin, S. M. Zhurav, Institute of Metal Physics, USSR Academy of Sciences, USSR Sverdlovsk, Mikhailovskiy, Russia, Vol 15, No 2, 1973, 805-810

JPRS 60499
9 November 1973



In recent years considerable successes have been achieved in the field of developing materials for permanent magnets. The synthesis of compounds of the type $R_2Fe_{1-x}Al_x$ (where R is one of the rare-earth elements, yttrium or thorium), which possess a high value of the constant of uniaxial anisotropy (in the order of 10^7-10^8 erg/cm³), for example, $1/1$. The process of manufacturing permanent magnets from such materials is reduced to grinding an alloy and compacting the resultant powder. Here, since due to the high value of anisotropy energy, the process and the paramagnetic interaction turns out to be inefficient, the powder can be compacted without substantial lowering of the coercive force, to a density close to the solid material. All the particles must be oriented prior to the solid material. It is noted that such possible values of magnetic energy (it is suggested that such particles is a single crystal and, consequently, magnetically uniaxial) and the compaction to be done in the direction of easy magnetization along one direction so as to create a magnetic structure. This can usually be achieved by means of placing the powder in a magnetic field. The main difficulty in processing the powder is the subsequent texture during the subsequent compaction of the powder. $2/2$.

Methods of pressing in metallic dies ordinarily used leads to a significant lowering of the powder magnetic texture. This was caused by deformation of the material in one direction (in

USSR

UDC: 621.396.6-181.5

RESHETNIKOV, N. V., PETROV, E. N.

"Statistical Approach to Intensification of Microcircuit Assembly"

Sb. nauchn. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronic Technology), 1970, vyp. 5, pp 212-217 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V220)

Translation: Investigations are made of the working capacity of microcircuit assembly workers with respect to production and physiological indices with subsequent analysis. Two phases of variation in working capacity are observed: an improvement in working capacity in the first hour of work, and deterioration from the third hour on. Measures are proposed for maintaining a high level of working capacity. Resumé.

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USSR

UDC 612.89

MILOKHIN, A. A., RESHETNIKOV, S. S.

Reflektornaya samoregulyatsiya neyronov (Reflex Self-Regulation of Neurons),
Izd. LGU, 1972, 72 pp

Annotation

An original conception of the autoregulation of neurons -- the basic elements in the nervous system -- is advanced on the basis of morphological studies of the sensory innervation of ganglionic cells conducted by the authors on the example of autonomic and encephalospinal ganglia. Principles in the structural organization of the autoregulation of nerve cells are investigated in detail. A hypothesis is advanced as to the significance of these mechanisms in sustaining a high measure of stability and reliability in the functioning of the nervous system. 43 ill. Biblio: 91 titles.

Introduction

The recent discovery of the receptor innervation of neurons based on the example of ganglia of the autonomic nervous system (Milokhin, 1959 a, b, 1961, 1963; Kolosov and Milokhin, 1963) has made it possible to find new and probably quite unexpected avenues to the understanding and solution of such age-old and extremely important problems in neurobiology as autoregulation and reliability in the functioning of the nervous system. There is no need to mention the broad applied spectrum of these problems in the most diverse areas of knowledge -- from medicine to bionics and cybernetics.

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USSR

MILOKHIN, A. A. RESHETNIKOV, S. S., Izd. LGU, 1972, 72 PP

Indeed the existence of receptors in the autonomic ganglia and especially the ascertainment of the receptor innervation of the ganglionic neurons per se take on genuinely fundamental importance especially in view of the fact that these morphological observations make it possible to extend to the nervous system proper the selfsame mechanisms of autoregulation that are already well known and that have been studied in detail in other organs and systems of the living organism.

At the same time the existence of receptors that are linked to ganglionic nervous structures most definitely and unequivocally indicates that the nervous system is not only a system for storing and processing the information that it received but that it can itself be the source of information as well. And this particular information about the functional state of the nervous elements unquestionably is fundamentally important to the normal functioning of the nervous system and of the entire organism as a whole. It is precisely in this aspect that the receptor innervation of ganglionic neurons -- this new type of interneuronal link in the nervous system -- will be examined here.

Contents

Introduction 3

Morphological basis of the autoregulation of neurons of autonomic
2/3 ganglia 4

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MILOKHIN, A. A., RESHETNIKOV, S. S., Izd. LGU, 1972, 72 pp

Morphological basis of autoregulation of encephalospinal ganglionic neurons	17
Conclusion	25
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Illustrations	33

3/3

1/2 037

TITLE--ON DYNAMICS OF THE THREE AXIS GYRO STABILIZED PLATFORM OF THE SPACECRAFT -U- PROCESSING DATE--16OCT70

AUTHOR--RESHETNIKOV, V.I.

R

COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 8 P. DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION, SPACE TECHNOLOGY

TOPIC TAGS--GYROSTABILIZED PLATFORM, SPACECRAFT GUIDANCE, MANEUVERABLE SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0004

STEP NO--FR/0000/70/000/000/0008/0008

CIRC ACCESSION NO--AT0117304

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DYNAMICS OF GYRO STABILIZED PLATFORMS INTENDED FOR GUIDANCE PURPOSES IN SPACE. BASED ON THE METHOD BY ISHLINSKY, EXACT EXPRESSIONS FOR GIMBAL INFLUENCE ON THE GYRO PLATFORM AT ELABORATE MANEUVERS OF THE SPACECRAFT ARE OBTAINED. IN THESE FORMULAS, GIMBAL INERTIA, FRICTION TORQUES, AND STABILIZING MOTOR TORQUES ARE TAKEN INTO CONSIDERATION. SEVERAL PARTICULAR CASES OF BASE MOTION ARE CONSIDERED WHICH MAKE IT POSSIBLE TO WATCH CHANGES IN CONNECTIONS BETWEEN STABILIZATION CHANNELS, MAIN FREQUENCIES OF PLATFORM MOTIONS, AND TORQUE INCREASES WHICH SHOULD BE DAMPED BY STABILIZING MOTORS. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT PROBLEM MEKHANIKI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 628.1.034:628.175:541.13

SHAPOSHNIK, V. A., RESHETNIKOVA, A. K., ZOLOTAREVA, R. I., DROBYSHEVA, I. V.,
and ISAYEV, N. I., Voronezh Technological Institute

"Water Demineralization by Means of Electrolysis With Intermembrane Ion
Exchange Resin Filling"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 12, Dec 73, pp 2659-2663

Abstract: A method was developed for production of highly desalinated water with a specific resistance of 15-20 MΩ·cm, based on a two-step electro-dialysis combined with intermembrane filling of the desalination sections with a mixed layer of ion exchange resins KU-2 and AV-17. A preliminary sodium cationization had to be carried out in this process. It has been determined that filling the electro-dialyzer sections with a mixed layer of the ion exchange resins increases the specific density of the current.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 017

TITLE--THE APPLICATION OF I.R. SPECTROSCOPY FOR DETERMINING THE NATURE OF
MICA INCLUSIONS -U-

AUTHOR--RESHETNIKOVA, A.K.

COUNTRY OF INFO--USSR

R.

SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 749-52 (APRIL
1970)

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MICA, IR SPECTROSCOPY, IRON OXIDE, CHLORINE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1095

STEP NO--UR/0368/70/012/004/0749/0752

CIRC ACCESSION NO--AP0136515

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136515

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTRA OF PURE MUSCOVITE AS WELL AS MUSCOVITE WITH INCLUSIONS AND MAGNESIAFERROUS CHLORITE WERE COMPARED. STRETCH AND DEFORMATION VIBRATIONS OF THE SI-O BOND ARE SUBJECT TO INFLUENCE OF CATIONS OF THE AL PRIME3 POSITIVE) PRIMEIV SPHERE PARTIALLY SUBSTITUTING (SI PRIME4 POSITIVE) PRIMEIV. THIS DISPLACES THE MAIN ABSORPTION BAND OF THE MUSCOVITE WITH CHLORITE AND ALSO CHANGES THE CONFIGURATION OF THE MAIN BAND. IN ADDITION, THERE IS ACTION OF (AL PRIME3 POSITIVE) PRIMEVI, (FE PRIME2 POSITIVE, PRIME3 POSITIVE) PRIMEVI AND (MG PRIME2 POSITIVE) PRIMEVI CATIONS IN OCTAHEDRAL POSITIONS. THE OBSERVED SPECTRA CONFIRM THEREFORE, THE PRESENCE OF CHLORITE IN SPOTTED MICA, WHILE ABSENCE OF STRETCH VIBRATIONS IN HEMATITE AND LIMONITE DISPROVE THE HYPOTHESIS OF MINERAL INCLUSION IN THE FORM OF FREE FE OXIDES IN MUSCOVITE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EMISSIVITY OF LOWER LEVEL CLOUDS IN THE TRANSPARENCY WINDOW 8-12
MICRONS--U-
AUTHOR--(02)--RESHETNIKOVA, I.S., POPOV, O.I.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,
VOL VI, NO 6, 1970, PP 639-640
DATE PUBLISHED-----70

R

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ATMOSPHERIC CLOUD, SPECTROMETER, EMISSIVITY, AIRCRAFT
MEASUREMENT, VERTICAL SOUNDING OPTIC DENSITY/(U)SPL23 SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0516

STEP NO--UR/0362/70/006/006/0639/0640

CIRC ACCESSION NO--AP0132715

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 020

CIRC ACCESSION NO--AP0132715

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF MEASUREMENTS OF THE SPECTRAL EMISSIVITY OF DENSE LOWER LEVEL CLOUDS. THE MEASUREMENTS WERE MADE WITH A SPECIAL SP-123 AIRBORNE DIFFRACTION SPECTROMETER (GRATING 75 RULINGS-MM). THE SPECTRAL WIDTH OF THE SLIT WAS 0.2 MICRON; THE ANGLE OF THE FIELD OF VIEW WAS 2DEGREES BY 4DEGREES; THE EMISSION DETECTOR WAS AN OAP-4 OPTICAL ACOUSTICAL CHAMBER. THE INSTRUMENT WAS CARRIED ABOARD AN AIRCRAFT LABORATORY OF THE MAIN GEOPHYSICAL OBSERVATORY DESIGNED FOR MEASURING CLOUD SPECTRA IN THE ATMOSPHERE IN THE REGION 6.5-13 MICRONS. THE SPECTROMETER HAD A SPECIAL OPTICAL ROTATING HEAD WHICH REPLACED AN AIRCRAFT WINDOW. ROTATION OF THE SIGHTING MIRROR MAKES IT POSSIBLE TO MEASURE THE CLOUD SPECTRA DURING OBSERVATION IN THE NADIR AND SKY SPECTRA IN THE CASE OF OBSERVATIONS IN THE ZENITH. THE INSTRUMENT WAS CALIBRATED IN ABSOLUTE UNITS BY PERIODIC REGISTRY OF THE EMISSION SPECTRA FOR A BLACK BODY WITH A KNOWN TEMPERATURE. THE SPECTRA WERE REGISTERED DURING AIRCRAFT FLIGHT NEAR THE UPPER CLOUD BOUNDARY. THE CLOUDS WERE FIRST VERTICALLY SOUNDED FOR DETERMINING THEIR THICKNESS, OPTICAL DENSITY AND TEMPERATURE CROSS SECTION. EXTENSIVE FIELDS OF DENSE OPAQUE CLOUDS WERE SELECTED. FIG. 1 IN THE TEXT SHOWS THE MEAN SPECTRA OF CLOUDS AND THE SKY SPECTRA FOR TWO FLIGHTS. FIG. 2 IN THE TEXT SHOWS CLOUD EMISSIVITY CURVES COMPUTED ON THE BASIS OF MEASUREMENT DATA. THE EXPERIMENTAL DATA AGREE WELL WITH EARLIER COMPUTATIONS.

UNCLASSIFIED

UDC 615.272:576.851.553].012.8

USSR

BLAGOVESHCHENSKIY, V. A., RESHETNIKOVA, L. N., BULATOVA, T. I., and PEROVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Purification and Concentration of Cl. botulinum F Toxoid"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972, pp 22-25

Abstract: Highly immunogenic toxoids can be obtained by a 2-stage method of purification and concentration. Primary purification is achieved by precipitating crude toxoid with 1 N hydrochloric acid in the isoelectric zone after adding 15% NaCl. Secondary purification involves repeated precipitation of the toxoid with 1 N hydrochloric acid in the isoelectric zone after adding NaCl (for toxoids prepared on casein media) or by precipitating it in the cold with 1 1/2 parts chilled acetone (for toxoids prepared on fish media). White mice immunized once with the purified and concentrated toxoids (5 toxoid binding units) survived the injection of 5000 MLD of type F toxin.

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- 26 -

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--NONSYMPATHETIC CARDIO STIMULATING SECRETION FROM HEART DURING
 STIMULATION OF THE SYMPATHETIC NERVE -U-
 AUTHOR-(02)-PUTINTSEVA, T.G., RESHETNIKOVA, N.A. *R*
 COUNTRY OF INFO--USSR
 SOURCE--FIZIOL. ZH. SSSR IM. T. M. SECHENOVA 1970, 56(2), 231-6
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--SYMPATHETIC NERVOUS SYSTEM, SECRETION, FROG, HEART,
 ADRENALINE, NORADRENALIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1996/0425

STEP NO--UR/0239/70/055/002/0231/0236

CIRC ACCESSION NO--AP0117661

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117661

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ADDN. TO THE ADRENERGIC MEDIATOR APPEARING DURING SYMPATHETIC STIMULATION IN FROG HEART PERFUSATE, AN ACTIVE STIMULATORY FACTOR ALSO APPEARED. THE PHYSIOL. ACTIVE SUBSTANCE (I) WAS THERMOSTABLE AND STIMULATED THE RECIPIENT HEART WITHOUT REDN. BY THE BETA ADRENOLYTIC DICHLORO ISOPROTERENOL. BOTH PROPERTIES WERE OF A NONCATECHOL AMINE NATURE. UNCOUPLING BY 2,4-DINITROPHENOL DID NOT EFFECT THE RELEASE OF I FROM THE DONOR HEART DURING SYMPATHETIC NERVE STIMULATION, WHILE THE GLYCOLYTIC POISON NAF COMPLETELY INHIBITED THIS PROCESS. THUS, RELEASE OF I SEEMS TO DEPEND ON GLYCOLYSIS. I WAS ANALOGOUS TO FACTOR A, THE CARDIOSTIMULATORY SUBSTANCE RELEASED FROM THE MYOCARDIUM BY EXOGENOUS ADRENALINE OR NORADRENALINE. FACTOR A INCREASED THE EFFECTIVENESS OF FROG HEART SYMPATHETIC NERVE STIMULATION. FACILITY: KH. S. KOSHTOYANTS PHYSIOL. LAB., INST. EVOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: **AP0047356**

Ref. Code: **VR0589**

R

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 35-39

**ON BLOOD SUPPLY OF THE MOBILIZED ESOPHAGUS AND ITS MUCOUS
MEMBRANE AFTER DEMUCOSATION**

By A. I. Reshetov and P. N. Zubarev

Based on anatomical findings on 25 cadavers and 27 clinical observations it is concluded that in most cases the mobilized esophagus could be viable in preservation of the supplying vessels only above (inferior thyroid) or below (left gastric). The displacement of such esophagus under the skin is not hazardous since the occurrence of partial necrosis does not lead to grave sequelae. After demucosation of the esophagus the mucosa vitality is preserved due to blood flow in vessels of submucous layer where a great number of anastomoses is observed.

111

REEL/FRAME
19790882

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UDC 621.791.052:539.414

USSR

BAKSHI, O. A., Doctor of Technical Sciences; KLYKOV, N. A.,
Candidate of Technical Sciences, and RESHETOV, A. L., Engineer

"Fatigue Strength of Welded Joints With Soft Interlayer in
Bending With Twisting"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 1-3

Abstract: A study was made of the effect of the relative thick-
ness (k) of a soft interlayer, determinable as the ratio of in-
terlayer thickness to the thickness of the specimen, on the fa-
tigue strength of 250 x 18 x 18 mm specimens of brand 35 steel in
a plane state of stress in bending with twisting. The hardness
of the base metal and of the interlayer metal were found to be
independent of k . In the plane state of stress, the fatigue
strength of specimens with a soft interlayer increases with de-
creasing k ; on twisting, it is independent of the interlayer
thickness. At given relative interlayer thickness, with increa-
sing ratio $\gamma = \tau_{yx} / \sigma_x$, where τ_{yx} and σ_x are the tangential and
normal stresses acting in the cross section of the specimen, a
decrease of limiting normal stresses σ_x is observed. The charac-
ter of the fatigue failure of specimens with an interlayer depends

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USSR

BAKSHI, O. A., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 1-3

on the dimension of the latter. At k changing from 0.13 to 0.17 and $\gamma > 0$, an egress of the fatigue crack into the base metal is observed. At $k \geq 0.6$, the fatigue crack is always located in the metal of the soft interlayer. Four figures, three tables, six bibliographic references.

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USSR

UDC 621.791.754.011:546.821

KLYKOV, N. A., RESHETOV, A. L., Chelyabinsk Polytechnic Institute, RUSSO,
V. L., ZELENII, V. A., Leningrad

"Stress-Concentration Sensitivity of Seam-Zone Metal and Welded Seams of
Titanium Alloys"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 30-32.

Abstract: The notch sensitivity of the welded joints in titanium alloys was studied using VT5 and OT4-1 alloys. The fatigue resistance of the metal in the seam, near-seam zone and base metal differs. Both flat and cylindrical specimens were studied with a test base of $5 \cdot 10^6$ cycles. It was found that the thermal cycle of welding influences fatigue strength and sensitivity to stress concentration of the metal of the seam and near-seam zone of titanium alloys. As the sensitivity to stress concentration increases, the fatigue limit of smooth specimens decreases.

1/1

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1/2 - 011
 TITLE--PRINCIPLES OF THE OPERATION OF THE METALLIC ELECTRODES OF A
 MAGNETOHYDRODYNAMIC GENERATOR -U-
 AUTHOR--ZELIKSON, YU.M., KIRILLOV, V.V., RESHETOV, E.P., FLID, B.D.
 COUNTRY OF INFO--USSR
 SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1) 193-202
 DATE PUBLISHED-----70

PROCESSING DATE--11SEP70

UNCLASSIFIED

R

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), ELECTRONICS AND
 ELECTRICAL ENGR.
 TOPIC TAGS--ELECTRODE DESIGN, ELECTRODE PROPERTY, MAGNETOHYDRODYNAMIC
 GENERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1989/0603

STEP NO--UR/0294/70/008/001/0193/0202

CIRC ACCESSION NO--AP0107200
 UNCLASSIFIED

PROCESSING DATE--11SEP70

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0107200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL, STAINLESS STEEL, AND CU ELECTRODES WERE EVALUATED, IN AN APP. DESCRIBED IN DETAIL, UNDER CONDITIONS APPROACHING THOSE OF ELECTRODES IN MHD GENERATORS. NONLINEAR V,A CHARACTERISTICS WERE OBSD. IN THE EXPTS.; AT CURRENT OF 0.1-0.15 A AND THRESHOLD VOLTAGES OF 70-120 V, AN ARC DISCHARGE, BASED ON FLUCTUATIONS IN GAS FLOW, WAS OBSD. AT THE CATHODE. OPERATIONS IN THE ARC DISCHARGE RANGE HAVE A SIGNIFICANT EFFECT ON THE ELECTRODE CURRENT FLUCTUATIONS; THE RANDOMLY FORMED CATHODE SPOTS FORMED VARY AS TO QUANTITY, SIZE, AND CURRENT VALUE. BASED ON THE TOTAL ELECTRODE CURRENT, A RELATION WAS DEVELOPED FOR THE CURRENT FLUX IN A SPOT.

UNCLASSIFIED

USSR

UDC 536.722.001.2

CHEKHOVSKIY, V. YA., TARASOV, V. D., and RESEETOV, L. A.

"Experimental Research in the Enthalpy of Al_2O_3 in the 1,400-2,313 K Range"

Khar'kov, Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby
USSR, 1972, -- sb. (Ukrainian Republic Scientific and Technological Conference
Honoring the 50th Anniversary of the Ukrainian SSR's Metrological Service, 1972
-- Collection of Works), 1972, pp 68-69 (from Referativnyy Zhurnal -- Metrolo-
giya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.972 by V.S.K.)

Translation: The authors present the results of an experimental determination of the enthalpy of aluminum oxide at high temperatures (on the order of 1,400-2,313 K) right up to its melting point. The measurements were made by the mixing method, using large calorimeters with a copper block and an isothermal casing. Sapphire (with an α - Al_2O_3 content of 99.9 percent) and corundum (with an α - Al_2O_3 content of 99.99 percent) were used in the investigation. Fourteen enthalpy values were obtained in the 1,400-2,313 K range, and the experimental data were compared with the results of research described in the literature.

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USSR

UDC: 621.397:612.843.721

SHUMLYAYEV, V. S., ~~RESHETOV, I. A.~~ Leningrad Electrical Engineering Institute of Communications

"A Scanning Method for Transmission and Playback of Stereo Television Images"

USSR Author's Certificate No 303736, filed 25 Nov 68, published 1 Jul 71 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3G116 P)

Translation: A scanning method is proposed for transmission and playback of stereo television images with frame-by-frame transmission and playback of a stereopair. To increase the depth of the reproduced image, orthogonal directions are used for scanning the left and right images of the stereopair in transmission and reception. Resumé.

1/1

Acc. Nr.: AA0040448

Ref. Code: UR 0482

USSR

UDC 621.376.4:621.394.62

JPRS 50248

DUKHOVNER, A. N., and RESHETOV, L. A.

"Apparatus for Phase Difference Signal Reception"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 52, Author Certificate No 258396 Class 21a⁴.

Abstract: This author's certificate introduces an apparatus for phase difference signal reception using a coherent method of reception. In order to eliminate the effect of random jump-like signal phase variation by using a code, in which the alphabet element is characterized by one pulse and one interval, two differentiating circuits are connected to the anode and cathode of the pulse separator tube after a detector. The circuits outputs are coupled to opposing diodes, while the pulse differentiating circuit of positive polarity contains the pulse duration delay line.

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Li

Receivers and Transmitters

USSR

UDC 621.376.4:621.394.62

DUKHOVNER, A. N., and RESHETOV, L. A.

"Apparatus for Phase Difference Signal Reception"

Moscow, Otkrytiya izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 52, Author Certificate No 258396 Class 21a⁴.

Abstract: This author's certificate introduces an apparatus for phase difference signal reception using a coherent method of reception. In order to eliminate the effect of random jump-like signal phase variation by using a code, in which the alphabet element is characterized by one pulse and one interval, two differentiating circuits are connected to the anode and cathode of the pulse separator tube after a detector. The circuits outputs are coupled to opposing diodes, while the pulse differentiating circuit of positive polarity contains the pulse duration delay line.

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USSR

UDC: 551.511

RESHETOV, V. D.

"Pulsations of Wind Speed in a Boundary Layer as Observed in Radiosonde Probing of the Atmosphere"

Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. Min. SSSR (Works. Institute of Experimental Meteorology. Main Administration of the Hydrometeorological Service Affiliated With the Council of Ministers of the USSR), 1972, vyp. 27, pp 151-153 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B996)

Translation: A method is outlined for obtaining data on the nonhomogeneities of an airstream in the atmosphere by special processing of radar observations of radiosondes. The resultant data indicate that the airstream in the boundary layer of the atmosphere at altitudes of 0.5-1.5 km is most strongly turbulized at certain optimum or "resonance" wind speeds and vertical temperature gradients. There are two such regions of airstream instability. One of them takes place in the case of unstable stratification with gradients of $\sim 0.8-1.0^{\circ}\text{C}$ per 100 m and wind speeds of $18-20 \text{ m}\cdot\text{s}^{-1}$, and the other in the presence of inversions with gradients

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USSR

RESHETOV, V. D., Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. Min. SSSR, 1972, vyp. 27, pp 151-153

of $\sim 0.8-1.0^{\circ}\text{C}$ per 100 m and with wind speeds of $10-12 \text{ m}\cdot\text{s}^{-1}$. The average value of the pulsation component of wind speed is $\sim 3 \text{ m}\cdot\text{s}^{-1}$. Author's abstract.

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USSR

UDC 661.665.1:621.313.538.4

ZELIKSON, YU. M., RESHETOV, YE. P., FLID, B. D., VINOGRADOV, YU. A.

"Study of Silicon Carbide Electrodes for an Open-Cycle Magnetohydrodynamic Generator"

V sb. Magnitogidrodinam. metod polucheniya elektroenergii (Magnetohydrodynamic Method of Obtaining Electric Power--collection of works), vyp. 3, Moscow, Energiya, 1972, pp 98-110 (from RZh-Aviatsionnyye i raketnyy dvigateli otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.149)

Translation: Results are presented from a study of silicon carbide electrodes in a device simulating the conditions in an open cycle magnetohydrodynamic generator channel. Data are presented on the effect of the plasma composition on the nature of the electrode processes. A study was made of the effect of the potassium additive concentration on the shape of the volt-ampere and sounding characteristics. The relation is presented for the cathode drop as a function of current at different potassium concentrations in the flow. It was established that with a potassium concentration of 0.3% and more there are in practice no cathode drops on the silicon carbide electrodes at $T_{el} \geq 1,350^{\circ} C$. A relation was found for the limiting distributed discharge currents as a function of the electrode temperatures. The experimental values of these currents

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ZELIKSON, YU. M., et al., Magnitogidrodinam. metod polucheniya elektroenergii, vyp. 3, Moscow, Energiya, 1972, pp 98-110

in the electrode temperature range of 1,350-1,500° C coincide satisfactorily with the ones calculated by the Richardson formula for $A=120$ amps/(cm²·deg²) and $\phi_{eff} = 2.7$ electron volts. The dependence of the mean erosion rate of the electrodes on the temperature and current density was defined. It was demonstrated that at an electrode temperature of 1,500° C the erosion does not in practice depend on the current density. There are 10 illustrations and a 13-entry bibliography.

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1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF THE POROUS STRUCTURE OF A ZINC ELECTRODE ON ITS
ELECTRICAL CHARACTERISTICS -U-
AUTHOR-(C3)-RESHETOVA, G.N., AFANASYEVA, L.A., ARKHANGELSKAYA, Z.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 843-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--POROSITY, ZINC, METAL ELECTRODE, ELECTRIC PROPERTY, SURFACE
AREA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1946 STEP NO--OR/0080/70/043/004/0843/0847
CIRC ACCESSION NO--AP0152207

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132207

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. ZN ELECTRODES PREPD. BY DEPOSITION FROM ZINCATE SOLNS. ONTO A POROUS CU SUBSTRATE HAVING A D. OF 1-3 G-CM. PRIME3 WERE DISCHARGED BETWEEN 2 AGG COUNTER ELECTRODES IN 10N KOH (VOL. EQUALS 2 ML-G ACTIVE ZN). ELECTRODES HAVING A TRUE SURFACE AREA OF 8.5 M PRIME2-G HAD A POROSITY P EQUALS 70PERCENT; ELECTRODES WITH AN AREA EQUALS 0.4 M PRIME2-G HAD P EQUALS 30PERCENT. OPTIMUM ELECTROCHEM. CHARACTERISTICS (DURATION OF DISCHARGE AT CONST. VOLTAGE) OCCURRED FOR ELECTRODES WHOSE P EQUALS 60-65PERCENT; THESE ELECTRODES HAD D. 1.2-1.8 G-CM PRIME2. AT 30 A-DM PRIME2 AND 25DEGREES, THESE ELECTRODES HAD A UTILIZATION COEFF. OF 75PERCENT, WHEREAS ELECTRODES HAVING P EQUALS 30PERCENT, THE UTILIZATION WAS ONLY 20PERCENT. INCREASING THE DISCHARGE TEMP. INCREASED THE UTILIZATION.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PREPARATION OF VANADIUM ISOTOPE FOILS -U-

AUTHOR--(03)--KOVALENKO, L.I., ROZEN, A.A., RESHETOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 239

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--METAL FOIL, VANADIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1885

STEP NO--UR/0120/70/000/001/0239/0239

CIRC ACCESSION NO--AP0108215

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0108215

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR PREPG. FOILS 1-3 MU THICK FROM SMALL AMTS. OF V SUB2 O SUB5. V SUB2 OF SUB5 WAS REDUCED BY THE CALCITHERMAL METHOD (G. A. MEERSON AND A. N. ZELIKMAN, 1955) WITH SUBSEQUENT IODIZING OF THE METAL TO VI SUB2. VAPORS OF VI SUB2 WERE DISINTEGRATED ON A BE SUBSTRATE HEATED TO SIMILAR TO 1250DEGREEK IN A 2.5 TIMES 10 PRIME NEGATIVE 5 TORR VACUUM TO FORM THE V FOILS. THE FOILS CONTAIN LESS GASEOUS IMPURITIES THAN THE V POWDER. FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 612.766.1:622.272.3

RESHETVIK A. I., VANIN, L. G., ONISHCHENKO, L. P., TARASENKO, V. T., and VASYL'KOV, V. M., Donetsk Institute of the Work Hygiene and Occupational Diseases

"Physiological Function Stress of Miners' Organisms Under Conditions of the Deep Donbas Mines"

Kiev, Fiziologichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 547-553

Abstract: Physiological and ergometric studies were carried out with experienced miners (15 years) during a full shift of manual work, or a combination of manual and machine work under different microclimatic conditions (70-95% humidity, 22-31°C). High temperature of deep mines (29-31°C) reduces the work productivity and increases the functional stresses of miners. A danger of heat stroke was observed with workers who worked previously in not too deep mines, and also in experienced miners after vacations. Adaptation of miners to working conditions at 29-31°C lasts for 1 month, and readaptation, for 15 days. After adaptation to heat the work productivity increases and the functional stress of the whole organism decreases, along with physiological effectiveness. In order to avoid chronic overstresses of miners in deep mines a vacation every 6 months is recommended. Some formulas are presented for description of the physiological conditions of miners and for proper scheduling of their work and rest periods.

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1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--OXYGEN VACANCIES IN CHROMIUM DOPED RUTILE CRYSTALS -U--
AUTHOR--(03)-SOCHAVA, L.S., RESHINA, I.I., MIRLIN, D.N.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1214-21
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--DOPED ALLOY, EPR, TITANIUM OXIDE, MINERAL, OXYGEN, CRYSTAL
VACANCY, ELECTRON TRAP, VACUUM TECHNIQUE, MINERAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0375 STEP NO--UR/0181/70/012/004/1214/1221
CIRC ACCESSION NO--AP0126130
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126130

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

ABSTRACT. BY EPR, CONDITIONS WERE

INVESTIGATED OF THE APPEARANCE IN CR DOPED TIO SUB2 CRYSTALS OF
 COMPLEXES OF SUBSTITUTING CR PRIME3 POSITIVE IONS AND O VACANCIES IN THE
 2ND COORDINATION SHPERE. THE ABOVE COMPLEXES ARE PRODUCED BY VACUUM
 REDN. OF THE CR DOPED TIO SUB2 CRYSTALS AT 500-700DEGREES DUE TO THE
 FORMATION OF DEFECTS OF STOICHOMETRY, O VACANCIES. DEEP ELECTRONIC
 TRAPS FILLED AT STRONGER REDN. OF THE CRYSTALS AT 800-1000DEGREES ARE
 RELATED TO CR VACANCY COMPLEXES. FILLING OF THESE TRAPS DETS.,
 APPARENTLY, OPTICAL ABSORPTION IN THE REGION 1.1 EV OBSD. IN THE REDUCED
 CR DOPED TIO SUB2 CRYSTALS. FOR CONCNS. OF CR LARGER THAN 0.15 AT.
 PERCENT, THE CR VACANCY COMPLEXES ARE STABLE EFFECTS WHICH FREQUENTLY
 AFFECT THE CHARGE COMPENSATION IN THESE CRYSTALS. FACILITY:
 INST. PCLUPROV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.372.832.43

RESHNIKOV, V. V., SHISHKINSKIY, V. Ye., BERSHADSKIY, G. Sh.

"A Resonance Power Diode for the Decimeter Wavelength Band"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), 1970, vyp. 8(40), pp 98-99 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B171)

Translation: The paper describes the construction of a resonance diode for the decimeter wave band, designed for a high SHF power level. The design utilizes a ferrite-magnesium chromite insert, and also an effective system for heat removal from the insert. The diode can dissipate up to 6 kW of power. One illustration. Resumé.

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USSR

UDC 542.91:661.718.1

RESNIK, V. S., and PASHKUROV, N. G., Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy of Sciences USSR

"Some Phosphorus-Containing Esters of *N*-Hydroxyalkylpyrimidones"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2010-2012

Abstract: The article describes the synthesis of pyrimidone derivatives containing a C-O-P bond in the *N*-alkyl side chain. The reaction of *N*-hydroxy-alkyl-6-methyluracils with alkyl(aryl)phosphoric and phosphinic acid chlorides proceeds in different ways, depending on the reaction conditions and the number of chlorine atoms in the acid chloride. Best results are obtained in the reaction of 3-*N*-(β -hydroxyethyl)-6-methyluracils with phosphorus acid chlorides in an inert solvent (dioxane is best) in the presence of an equimolar quantity of pyridine at 30-60°. It was not possible to find a convenient method for the synthesis of esters of phosphorus acids and 2-amino-3-(hydroxyalkyl)-6-methyl-3,4-dihydro-4-pyrimidones.

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RESSIN, A. A.

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So: JPRS 59454
1A June 73

PIRUS

UDC 531.383
ACCURACY OF A TWO-CHANNEL COURSE SYSTEM WITH POSSIBLE FAILURE OF THE CORRECTION CHANNEL

Article by A. A. Resin, Riga Institute of Engineers of Civil Aviation (Ineni Komsomol) Leningrad, Izvestiya VUZ, Prikladnaya Matematika, Russian, No 3, 1973, pp 83-87

This article gives an analysis of the accuracy of a course system consisting of a gyroscope channel and a correction channel. The precision of a system with possible failure of the corrector is analyzed.

As we know, a breakdown of sensors in a complex navigational system does not usually lead to failure of the system but is accompanied only by a decrease in its precision. The defective sensors are disconnected and serial navigation is accomplished from the readings of those instruments that remain in working order.

It is of interest to evaluate the accuracy of a system with possible failures of the sensors.

Let us look at a two-channel course system having gyroscope and astronomical channels. The expression of the output error of such a system with linear correction characteristic has the form [1]:

$$\omega_k(t) = \frac{A}{T+T_k} \psi_k(t) + \frac{1}{T+T_k} \psi_k(t), \quad (1)$$

where k is a value which is inverse to the time constant of

USSR

UDC 616.988-614.4

RETINA, T. N., POVALISHINA, T. P., MARTSINKEVICH, Ch. I.,
~~VRSTUTA, Yu. S.~~, KLUG, L. S., and FILIPPENKOVA, Ye. D., Republic
Sanitary Epidemiological Station of the Bashkir SSR, Institute
of Poliomyelitis and Viral Encephalitides of the USSR Academy of
Medical Sciences, Main Sanitary Epidemiology Administration, of
the RSFSR Ministry of Health, and the Ufa City Sanitary Epidemio-
logical Station

"Epidemiological Analysis of Hemorrhagic Fever Diseases With a
Renal Syndrome Observed in Health Institutions in the City of
Ufa"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 1, Jan/Feb 71, pp 74-
76

Abstract: The 1964-1965 epidemic of hemorrhagic fever with a
renal syndrome in the Bashkir ASSR was thoroughly analyzed to
elucidate the source and route of infection. A total of 99 cases
of the disease were recorded in the resort city of Ufa among
students, employees, and tourists: 11 cases in the pioneer
camp, 13 in the Sanitary Forest School, 34 in the Children's
Tuberculosis Sanatorium, and 41 cases at the rest home. During
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USSR

RETINA, T. N., et al., Kazanskiy Meditsinskiy Zhurnal, No 1,
Jan/Feb 71, pp 74-76

the epidemic, the Ufa region was infested with rodents; field and house mice and voles were found in attics and basements and under porches of poorly constructed houses and in the forest. The pathogen was transmitted mainly through the air to individuals who breathed air with dust-containing particles emitted by infected rodents. This included persons working within buildings, sleeping in tents, or employed in field work. The main preventive measure is eradication of rodents living in buildings and in natural environments.

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- 31 -

USSR

UDC 613.6:65.011.56

RETNEY, V. M., Institute of Postgraduate Medicine imeni S. M. Kirov, Leningrad

"Some Aspects of Industrial Hygiene in Connection With Full Automation.
Relationship Between Scientific-Technological Progress and Industrial Hygiene"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 4, 1971, pp 9-12

Abstract: Full automation, the pivot of scientific and technological progress, is defined as the organization of production in such a way that the flow of work is controlled from a single panel set up in an isolated place or enclosed compartment. Such automation may confer with health advantages or disadvantages, depending on awareness of the possibilities by designers, engineers, and industrial physicians. The advantages include: (a) favorable working conditions - good light, freedom from noise, heat, dust, etc.; (b) reduction of the number of persons forced to work under unfavorable conditions (e.g., presence of toxic fumes, vibration, etc.); (c) sharp decrease in the amount of physical exertion required; (d) the demand for increased knowledge and ability to handle complex machines raises the educational level of the personnel. Among the hazards posed by full automation are: (a) increased nervous and emotional stress with adverse effects on the central nervous,

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RETNEV, V. M., Gigiyena Truda i Professional'nyye Zabolevaniya, No 4, 1971,
pp 9-12

cardiovascular, endocrine, and other systems due to the heavy inflow of information and possible presence of such unfavorable factors as high temperatures and loud noise; (b) unsatisfactory conditions outside and even inside the main work place because of poor design.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ACCELERATED PROVING GROUND TESTING OF SOME TRUCK ASSEMBLIES -U-

AUTHOR--(04)--BURDASOV, I.YE., KUKHLIN, I.YE., PAVLENKO, V.I., RETSKER, M.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AVTOMOBIL'NAYA PROMYSHLENNOST', NO 2, 1970, PP 23-25

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--ALTOBOMBILE, BIBLIOGRAPHY, ENGINE TEST FACILITY, CARGO TRUCK, HIGHWAY CONSTRUCTION, TEST FACILITY, VEHICLE PROVING GROUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1218

STEP NO--UR/0113/70/000/002/0023/0025

CIRC ACCESSION NO--AP0123162

UNCLASSIFIED

2/2 026

CIRC ACCESSION NO--AP0123182

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY CHARACTERISTICS ARE GIVEN OF SPECIAL PAVED ROADS AND "SHORT WAVE" TYPE ROADS CONSTRUCTED AT THE AUTOMOBILE TESTING RANGE OF NAMI (THE CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF AUTOMOBILES AND AUTOMOBILE ENGINES). RESULTS FROM TESTING TRUCKS ON THESE ROADS ARE GIVEN. THE OBTAINED RESULTS ARE ANALYZED.

UNCLASSIFIED

USSR

REYTER, E. I., and BENTS, V. A.

"Constricted Convective Flows with Asymmetric Positioning of Heat Sources"

Sb. nauchn. tr. Chelyab. politekhn. in-ta (Collection of Scientific Works of Chelyabinsk Polytechnic Institute), 1970, No 60, pp 4-24 (from Rzh-Mekhanika, No 1, Jan 71, Abstract No 1B1045 by T. A. Girshovich)

Translation: The article describes results of an experimental investigation of excess-temperature and air-velocity distribution on the axis of a plane constricted convective jet with asymmetric positioning of heat sources. The investigation was conducted on a two-dimensional model of a cross section of a building. Heat sources were flat electric furnaces installed on the floor of the model. Successive switching on and off of the furnaces made it possible to examine the influence of the positioning of heat sources. Holes were made in the bottom of the model, through which air intake occurred, while an exhaust opening was put on the axis of symmetry of the model at the top. In addition to the above-indicated quantitative investigation of flow characteristics, a qualitative investigation was conducted by filling the premises with smoke and sketching the pattern of the flow. It was

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USSR

REITER, E. I., and BENTS, V. A. , Sb. nauchn. tr. Chelyab. politekhn. in-ta
1970, No 60, pp 4-24

established, as was to be expected, that with asymmetric positioning of heat source the recirculating zones on both sides of the convective jet are different, and the authors found the coefficient of separation of the recirculating air according to flow weight rate and heat content. Further, empirical formulas were obtained for axial excess temperatures and air velocities.

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REUT, V.

2/2

Cybernetics

23 Feb 72

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ZTCI OXPHOTOGRAPH

01. 0238

REUTOV, V. *(Handwritten signature)*
Cybernetics Spring

SOI FRACTION PRESS DIRECT
26 Feb 1972

Moscow, Russia, 13 Oct 71, p 3

Abstract: The development, achievements and plans of the Computer Center of the USSR Academy of Sciences are given. The center was founded in April 1969. It is equipped with the high speed IBM-360/59 computer. The center is connected with more than 200 scientific institutions and research organizations and plants; the primary ones of which are the Almaty Mining and Metallurgical Center, the Chirchik Electrochemical Center, the Tashkent and Samarkand Centers. The computer center at the station plant is a three-story building with a Minsk-32 computer and other peripheral computers and devices. The plant also has machine tools with programmed control using program written language. The use of adaptive systems based on the theory developed by Professor M. M. Lavrentyev at the Moscow Machine Tool and Tool Institute is discussed. Adaptive systems of a computerized bookkeeping and accounting system are noted, and the installation of an automatic control system at the Chirchik Electrochemical Center and preparation of similar systems for the other mentioned plants are reported. The laws are listed.

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REUTOV, V., et al., Moscow, 13 Oct 71, p 3

The development of cybernetics in Uzbekistan by the resolutions of the 5th Congress of the CPSU will result in the creation of 12 branches, 5 territorial and 18 plant automated control systems. Twelve computer centers are already in operation.

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TITLE--FROM AN IDEA TO ITS REALIZATION -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HOW MAY THE EFFECTIVENESS OF THE WORK DONE BY RESEARCH AND DESIGN ORGANIZATIONS BE INCREASED? WHAT MUST BE DONE IN ORDER TO SHORTEN AS MUCH AS POSSIBLE THE PATH FROM THE CONCEPTION OF AN IDEA TO ITS EMBODIMENT IN PRODUCTION? A BROAD EXCHANGE OF VIEWS ON THIS SUBJECT HAS TAKEN PLACE IN PRAVDA DURING 1969 IN THE DEPARTMENT "THE EFFECTIVENESS OF SCIENCE". TO JUDGE FROM RESPONSES, THIS EXCHANGE HAS INTERESTED MANY READERS. TODAY WE PRINT A SURVEY OF THE LETTERS. OF COURSE, EXPERIMENTAL BASES DO NOT EXHAUST ALL THE PROBLEMS OF PUTTING INNOVATIONS TO WORK IN PRACTICE. CANDIDATE OF TECHNOLOGY I. RUDAVSKY, STAFF MEMBER OF THE ALL UNION RESEARCH INSTITUTE FOR DRILLING MACHINERY, WROTE OF THIS. THE ECONOMIC EFFECTIVENESS OF THE NEWLY DESIGNED SHAFT DRILLS CREATED BY THE INSTITUTE AMOUNTS TO SEVERAL TENS OF THOUSANDS OF RUBLES PER MACHINE, OF THE DRILL BITS, UP TO 255 RUBLES PER ITEM; OF DRILLING SHAFTS, UP TO FIVE RUBLES PER METER OF WELL DRILLED; OF NEW TECHNOLOGICAL PROCESSES IN DRILLING, UP TO 12 RUBLES PER METER SUNK. WIDE SCALE UTILIZATION OF THESE AND OTHER INNOVATIONS WOULD YIELD IMMENSE SAVINGS TO THE NATIONAL ECONOMY. BUT THE INSTITUTE HAS ONLY A SMALL EXPERIMENTAL BASE AT ITS DISPOSAL AND, NATURALLY, CANNOT DEVELOP LARGE SCALE SERIES PRODUCTION OF NEW MACHINERY. THERE ARE ALSO NO MACHINE BUILDING ENTERPRISES UNDER THE MINISTRY OF THE PETROLEUM EXTRACTING INDUSTRY. TO PLACE ORDERS WITH MACHINE BUILDING PLANTS IS TO INVITE NO SMALL NUMBER OF DIFFICULTIES. HOWEVER, MANY OTHER BRANCHES OF INDUSTRY THAT HAVE NO SUBORDINATE MACHINE BUILDING PLANTS ARE IN THE SAME STRAITS.

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ABSTRACT/EXTRACT--OF COURSE, A 'BREAK UP' OF THE MACHINE BUILDING INDUSTRY ALONG THE LINES OF THE BRANCHES IT SERVES IS OUT OF THE QUESTION. BUT IS IT REALLY IMPOSSIBLE FOR PERSONS FROM INTERRELATED MINISTRIES TO MEET MORE OFTEN AT THE BUSINESS CONFERENCE TABLE, FOR EXAMPLE, IN ORDER TO REACH SOLUTIONS EFFICIENTLY TO THE PROBLEMS OF USING NEW MACHINERY? MOREOVER, EXPERIENCE SUGGESTS THAT, EVEN IN MINISTRIES "LACKING MACHINE BUILDING", IT WOULD BE EXPEDIENT TO ESTABLISH EXPERIMENTAL ENTERPRISES LARGE ENOUGH TO PRODUCE PILOT SERIES OF NEW MACHINES, APPARATUS AND INSTRUMENTS. OTHERWISE, THE EFFORTS OF RESEARCHERS AND DESIGNERS WILL AT TIMES BE ENTIRELY WASTED. ENGINEER A. POLISHCHUK OF THE CITY OF IZHEVSK LISTED A NUMBER OF ALREADY TESTED PROGRESSIVE PRODUCTION PROCESSES THAT, NONETHELESS, HAD NOT BEEN APPLIED ON A MASS SCALE. WHY? BECAUSE, THE AUTHOR WROTE, "CERTAIN ECONOMIC LEADERS DO NOT WISH TO BECOME INVOLVED IN ANYTHING BESIDES FULFILLING THE CURRENT PLAN. DESIGNERS, TECHNOLOGISTS, MECHANICS AND RESEARCHERS IN PLANT LABORATORIES, THE CREATORS AND BUILDERS OF NEW TECHNICAL APPARATUS, FREQUENTLY FIND THEMSELVES IN THE POSITION OF MERE EXECUTORS. THEIR ROLES, RIGHTS AND RESPONSIBILITIES ARE DEPRECIATED. THIS, AT LEAST, IS THE WAY THE MATTER STANDS EVEN AT THE OUTSTANDING ENTERPRISE, THE IZHEVSK MACHINE PLANT". THE AUTHOR BELIEVED THAT PARTY COMMITTEES AND ECONOMIC LEADERS SHOULD GIVE MORE ACTIVE SUPPORT TO THE CREATIVE INITIATIVE OF ENGINEERING CADRES AND RAISE THEIR RESPONSIBILITY FOR TECHNICAL PROGRESS.

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ABSTRACT/EXTRACT--

THE LACK OF INTEREST IN MANY ENTERPRISES TOWARD EXPLOITING NEW MACHINERY WAS LIKEWISE NOTED BY S. CHEPIGO, DIRECTOR OF THE ALL UNION RESEARCH INSTITUTE FOR PROTEIN BIOSYNTHESIS. HE WROTE: "THE EXISTING PRINCIPLES FOR PLANNING PROFIT ON THE BASIS OF THE LEVEL OF THE PRODUCT'S UNIT COST AS ATTAINED BY EACH SPECIFIC ENTERPRISE AND THE EXAGGERATED WHOLESALE PRICES THAT HOLD IN MOST CASES ALLOW PLANTS MANUFACTURING OBSOLETE MACHINERY, EVEN AT HIGH UNIT COSTS, TO RECEIVE A POSITIVE EVALUATION OF THEIR OPERATIONS AND BONUSES". IN THE AUTHOR'S VIEW, A SCIENTIFICALLY GROUNDED PLANNED UNIT COST, CLOSE TO THE RATED UNIT COST, SHOULD BE FIXED FOR ALL ENTERPRISES. THIS WOULD FORCE EXECUTIVES TO INTRODUCE NEW TECHNICAL APPARATUS MORE RAPIDLY. ON THE OTHER HAND, IT ALSO HAPPENS THAT AN INDUSTRY'S WORKERS ARE WILLING TO EXPLOIT WHAT IS NEW AND PROGRESSIVE BUT FIND ON CLOSER INSPECTION THAT THERE IS NOTHING TO EXPLOIT. N. TIKHOMIROV, CHIEF ENGINEER OF THE PLANT THAT MANUFACTURES THE CHAIKA VACUUM CLEANER, HAS OFFERED A LONG LIST OF THE VARIOUS RESEARCH ORGANIZATIONS ENGAGED ON PROJECTS IN THE REALM OF HOUSEHOLD ELECTRICAL APPLIANCES. AND THE RESULTS? "SO FAR", HE WROTE, "NOT A SINGLE ORGANIZATION HAS DEvised FOR US AN ACTUAL MODEL OF A HOUSEHOLD APPLIANCE THAT MIGHT BE INTRODUCED INTO PRODUCTION". FORESTER V. KUZNETSOV OF MELEKESSE WAS DISSATISFIED WITH THE MANNER IN WHICH FORESTRY SCIENTISTS ARE SOLVING THE PROBLEMS OF TIMBER REPRODUCTION, PARTICULARLY IN THE CENTRAL DISTRICTS OF THE COUNTRY.

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ABSTRACT/EXTRACT--MANY READERS SEE THE WAY TO FURTHER STRENGTHENING OF THE TIES BETWEEN SCIENCE AND PRACTICE IN THE CREATION OF SCIENTIFIC PRODUCTION ASSOCIATIONS, ALTHOUGH THEY APPROACH THIS QUESTION FROM VARYING VIEWPOINTS. CANDIDATE OF ECONOMICS N. TYAMSHANSKY (LENINGRAD) FELT IT EXPEDIENT THAT ONLY THOSE RESEARCH AND DESIGN ORGANIZATIONS THAT DEAL EXCLUSIVELY WITH SOLUTION OF SCIENTIFIC AND TECHNICAL PROBLEMS FOR ENTERPRISES BE LINKED TO THOSE ENTERPRISES. IT WOULD BE IMPOSSIBLE, HOWEVER, IN THE AUTHOR'S OPINION, TO LINK A TRULY BRANCH RESEARCH ESTABLISHMENT, I.E., ONE WITH A BROADER CROSS SECTION OF INTERESTS, TO A SINGLE ENTERPRISE WITHOUT DOING HARM TO SCIENTIFIC AND TECHNICAL PROGRESS IN THE BRANCH: THE RESEARCH UNIT WOULD INEVITABLY BE SUBORDINATE TO THE INTERESTS OF ITS "OWN" PLANT AND WOULD BE UNABLE TO EFFECT ANY ACTIVE INFLUENCE OVER THE BRANCH AS A WHOLE. M. VARYUKHIN, DEPUTY DIRECTOR OF THE SARATOV ALKALINE BATTERY PLANT, ON THE CONTRARY, SAW IN THE LINKING OF BRANCH INSTITUTE AND ENTERPRISE ADVANTAGES FOR SCIENCE AND PRODUCTION. OF COURSE, THERE CAN BE NO SINGLE REMEDY FOR ALL REAL CASES. ONE THING IS INDUBITABLE: THE ESTABLISHMENT OF SCIENTIFIC PRODUCTION ASSOCIATIONS IS CLEARLY NEEDED, AND IT IS UP TO THE MINISTRIES AND DEPARTMENTS TO TAKE UP THE CAUSE WITH GREATER URGENCY. SUCH WAS THE OPINION OF ALL WHO TOOK PART IN DISCUSSING THE DATA IN PRAVADA.

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CIRC ACCESSION NO--AN0121642
ABSTRACT/EXTRACT--L. KUCHERSKY,

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INSTITUTE, FELT THAT DUPLICATION OF EFFORTS MUST NOT BE ELIMINATED ENTIRELY FROM THE PRACTICE OF RESEARCH ESTABLISHMENTS, FOR IT IS THUS THAT CREATIVE COMPETITION ARISES BETWEEN DIFFERENT COLLECTIVES AND THAT THE MONOPOLY OF INDIVIDUAL SCHOOLS AND TENDENCIES IS DONE AWAY WITH. THIS, OF COURSE, IS TURE. BUT,, ON THE OTHER HAND, AS CANDIDATE OF TECHNOLOGY I. ARTEMENKO WROTE, IMPROVEMENTS IN THE SHORING UP AND SUPPORT OF MINES, FOR EXAMPLE, ARE BEING STUDIED TO SOME DEGREE OR ANOTHER BY NEARLY ALL RESEARCH INSTITUTES IN THE U.S.S.R. MINISTRY OF THE COAL INDUSTRY AND BY MANY MINING INSTITUTES, BUT THE RESULTS OF THEIR WORK ARE STILL MEAGER. SUCH "COMPETITION" IS SCARCELY ADVANTAGEOUS. MANY OTHER MATTERS ALSO CAME UP IN THE LETTERS ON INCREASING THE EFFECTIVENESS OF SCIENCE. ONE CANNOT MENTION EVERYTHING IN A SURVEY. BUT ONE OTHER QUESTION CANNOT BE PASSED OVER, THAT OF THE QUALIFICATIONS OF SCIENTIFIC WORKERS AND THEIR RESPONSIBILITIES FOR THE TASK ASSIGNED THEM. "IN SCIENTIFIC ESTABLISHMENTS AND DESIGN OFFICES", REMARKED ENGINEER DESIGNER D. PAVLENKO OF BRYANSK, "THERE MUST BE NO STAFF MEMBERS WHO ARE UNABLE TO COPE WITH THEIR DUTIES". THIS IDEA RECEIVED SUPPORT FROM DOCTOR OF CHEMISTRY D. ZHIRYAKOV, HEAD OF THE TECHNICAL ADMINISTRATION OF THE U.S.S.R. MINISTRY OF THE CHEMICAL INDUSTRY, AND FROM MANY OTHER COMRADES.

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UDC: 539.1.074.22

REUTA, V. P., Kazan' "Order of the Red Banner of Labor" Aviation Institute
"An Aspiration Ionization Chamber"

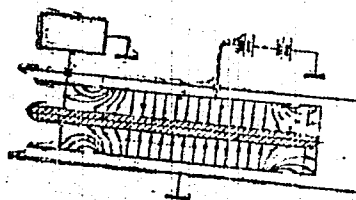
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Ohratzsy, Tovarnyye Znaki,
No 10, Apr 72, Author's Certificate No 332521, Division H, G, filed 30 Mar
70, published 14 Mar 72, p 312

Translation: This Author's Certificate introduces an aspiration ioniza-
tion chamber which contains a high-voltage electrode made in the form of
a cylinder. The device also contains a collecting electrode and an elec-
trostatic shielding electrode which is located at the input of the chamber
and is in mechanical and electrical contact with the collecting electrode.
As a distinguishing feature of the patent, the chamber is designed for
increasing the range of ion mobilities which can be registered, and for
reducing overall dimensions without increasing capacitance or the voltage
across the high-voltage electrode. An electrostatic shielding ring is
securely fastened to the collecting electrode at the output of the chamber.
The diameter of the ring is equal to that of the high-voltage electrode,
and a metal grid is stretched over the output face of the ring.

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USSR

REUTA, V. P., USSR Author's Certificate No 332521



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EAST GERMANY

FLUCK, E., Professor, Dr., REUTERT, P. J., Dr., and BINDER, H., Dr., Institute for Inorganic Chemistry, University (Institut fuer Anorganische Chemie der Universitaet), Stuttgart.

"Dithiophosphoric Acid Betaines"

Leipzig, Zeitschrift fuer Anorganische und Allgemeine Chemie, Vol 397, No 3, Apr 73, pp 225-236

Abstract: The synthesis of compounds of the general formula $C_5H_5N-P(S)_2X$, where X denotes F, $N(CH_3)_2$, and Br; the reactions of pyridiniumhalogeno-dithiophosphoric betaines with alcohols; the reactions of pyridinium-fluorodithiophosphoric betaines with hydrohalogenic acids; and the reactions of pyridinium-dithiophosphoric betaines with Lewis bases were described. In addition, methods for the synthesis of pyridiniummethoxyfluoro-, pyridiniummethoxyfluoro-, pyridiniumalkoxyfluoro-, pyridiniumchlorofluoro-, pyridiniumdithiophosphoric betaine was described. The chemical shifts, coupling constants, and other structural characteristics of the compounds synthesized were presented on the basis of nuclear magnetic resonance spectrometric data. Twelve references, including 4 German and 8 Western. (Manuscript received 23 Oct 72).

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USSR

UDC: 621.396.961

REUTOV, A. P., MIKHAYLOV, B. A., KONDRATENKOV, G. S., BOYKO, B. V.
"Sidelooking Radar Stations"

Radiolokatsionnyye stantsii bokovogo obzora (cf. English above), Moscow,
"Sov. radio", 1970, 360 pp, ill. 1 r. 15 k. (from RZh-Radiotekhnika, No 12,
Dec 70, Abstract No 1262 K)

Translation: The authors discuss the theory of operation of airborne
sidelooking radar stations designed to give detailed radar images of sur-
roundings. Methods are demonstrated for improving radar resolution. Two
types of sidelooking radar are examined in detail: with antenna located
along the fuselage, and with artificial antenna aperture. A survey is
given of information published in the literature relating to the principles
of sidelooking radar design and the peculiarities of sidelooking radar
mapping. Attention is given to a number of fundamental differences between
sidelooking and conventional radar. 170 illustrations, 5 tables, bibliog-
raphy of 106 titles. Resumé.

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USSR

UDC: 8.74

AVAKYAN, A. A., KNYAZHEV, I. I., REUTOV, O. N.

"On the Problem of Determining Optimum Periods for Preventative Maintenance of Systems With Recovery"

V sb. Osnovn. vopr. teorii i praktiki nadezhnosti (Basic Problems in the Theory and Practice of Reliability—collection of works), Moscow, "Sov. radio", 1971, pp 412-424 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V958)

Translation: Two methods of predicting failures in electronic devices are considered: on the basis of a priori and a posteriori processes of variation in the parameters of these devices. Systems of equations are proposed which relate the reliability of the devices, cost of preventative maintenance and labor expenditures to characteristics of the process of variation in parameters of the devices. Consideration is given to an algorithm for solving systems of these equations to determine optimum periods for carrying out preventative maintenance. Authors' abstract.

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