

USSR

UDC 621.317.328

GRUZDEV, S. V., DUEVOY, N. D., KARPOV, R. G., OSOKIN, V. I., CHIBRENOK, S. I.

"Superhigh-Frequency Power Meter"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratstv, Tovarnyye Znaki, No 17
12 May 70, p 56, Patent No 270888, Filed 8 Dec 68

Translation: This Author's Certificate introduces a superhigh-frequency power meter containing a thermistor bridge, an amplifier, a controlled frequency generator and a measuring regulation circuit. In order to increase the measurement accuracy, the controlled frequency oscillation output and the reference oscillation output in the sensitivity regulating circuit are connected via dividers to the pulse sequencing switch, and the subtractor output is connected to the digital sensor for controlling the conversion voltage frequency and the divisor factor of the dividers.

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USSR

UDC: 621.317.784

OSOKIN, V. I., DUBOVOY, N. D., KARPOV, R. G., GRUZDEV, S. V., CHIBRIKOV, S. I.

"An Automatic SHF Power Meter"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268519, filed 18 Nov 68, p 44

Abstract: This author's certificate introduces an automatic SHF power meter with double comparison. The unit contains an automatic-balance thermistor bridge, an SHF disconnect and a power indication circuit. As a distinguishing feature of the patent, measurement precision is improved by connecting the rectifier input to the bridge output and connecting the rectifier output to one of the comparator inputs, the other comparator input being connected to the output of an integrator. The comparator output is connected to flip-flop inputs. The output of the saw-tooth voltage generator is connected to a thermistor and a meter pointer.

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USSR

UDC 548.736.6

AVETISYAN, YE. I., CHICHAGOV, A. V., and BELOV, N. V., Moscow State University imeni M. V. Lomonosov

"Crystal Structure of NaGd Orthosilicate"

Moscow, Kristallografiya, Vol 15, No 5, Sep-Oct 70, pp 1066-1067

Abstract: NaGd orthosilicate is obtained from the $\text{Na}_2\text{O}-\text{Gd}_2\text{O}_3-\text{SiO}_2-\text{H}_2\text{O}$ system by the method of hydrothermal crystallization at a 40 percent concentration of NaOH, $T = 450^\circ \text{C}$, $P = 1000 \text{ atm}$. Tetragonal body-centered cell parameters: $a = 11.63$, $c = 5.41$ Å. Corresponding to the diffraction symbol $4 / m\bar{1} - /$ are three Fedorov groups; viz., $I4 / m$, $I4$, and $I\bar{4}$ (no piezo effect). The cell dimensions, type, and symmetry confirm the authors' previous conclusion that NaGd silicate is isostructural with NaSmSiO_4 .

The purpose of the present study was to refine the coordinates of the atoms and to elucidate the position of H_2O molecules in

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AVETISYAN, YE. I., et al., Kristallografiya, Vol 15, No 5, Sep-Oct 70, pp 1066-1067

the structures of synthetic sodium-rare earth silicates of the B type. The article lists the coordinates of the basis atoms and atomic spacings in the structure of NaGdSiO_4 . The formula for tetragonal B-type silicates should include one-fourth of an H_2O molecule; viz., $\text{NaTRSiO}_4 \cdot 0.25\text{H}_2\text{O}$. The article cites a special analysis by M. A. SHISHKOVSKAYA (Moscow State University) on the H_2O content of NaGd silicate.

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USSR

UDC 548.736.5

KHARAKH, YE. A., CHICHAGOV, A. V., and BELOV, N. V., Moscow State University imeni M. V. Lomonosov

"Crystal Structure of NaSmGeO_4 "

Moscow, Kristallografiya, Vol 15, No 5, Sep-Oct 70, pp 1064-1065

Abstract: NaSmGeO_4 is obtained in the $\text{Na}_2\text{O}-\text{Sm}_2\text{O}_3-\text{GeO}_2-\text{H}_2\text{O}$ system by the method of hydrothermal crystallization at a 40 percent concentration of NaOH, $T = 450^\circ\text{C}$, and $P = 1000\text{ atm}$. The parameters of the rhombic primitive unit cell are $a = 5.27 \pm 0.02$, $b = 11.70 \pm 0.03$, $c = 6.50 \pm 0.02\text{ \AA}$. Fedorov group $\text{Pbn}2_1$. Structurally NaSmGeO_4 resembles olivine-like (monticellite-like) NaYSiO_4 (coordination number Sm = 6, octahedron) rather than its nearest silicate analog NaSmSiO_4 (coordination number Sm = $6 + 2 = 8$, trigonal prism with two "glued-on" semioctahedra).

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Miscellaneous

USSR

UDC 669.15-196:669-974

ZAKHAROV, V. A., LAZAREVA, N. K., and CHICHAGOVA, N. P., Gor'kiy Automobile Plant

"Austenite Stability in Alloyed Cast Iron at Low Temperatures"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970,
pp 49-50

Abstract: Nickel-copper-chromium cast irons have an austenite structure at room temperature. At below-zero temperatures, however, the austenite in these cast irons turns to martensite, which is followed by volumetric changes, an increase in hardness, and a decrease in metal plasticity. This paper discusses the effect of chromium, nickel, manganese, and copper contents on austenite stability. The study involved 20 melts produced in an MGP-2 150-kg induction-type furnace with nickel contents ranging from 10 to 17%, manganese -- from 0.9 to 3.0%. With a decrease in temperature, the amount of transformed austenite in the cast irons increases. As cast, the cast irons of all melts, with the exception of melt 1 with 10% Ni, are structurally stable down to -76°C . Heat treating of the cast irons according to a specified technique increases the temperature of $\alpha\text{-}\gamma$ transformation, i.e., narrows down the stability range

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ZAKHAROV, V. A., et al, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970, pp 49-50

of austenite. Increasing the nickel and manganese contents moves the beginning of the martensite transformation to a lower temperature range. At 16% Ni and 1.5 Mn, austenite cast irons have a stable structure at -76°C . In order to preclude structural (and dimensional) changes in austenite cast iron parts at temperatures down to -76°C , it is necessary that the cast iron comprise a minimum of 15% Ni, 1.5-2.0% Mn. Intensive cooling to be used in conjunction with heat treating at $700-750^{\circ}\text{C}$ is proposed.

USSR

UDC 620.171.5

POLUKHIN, P. I., VORONTSOV, V. K., and CHICHENEV, N. A.

"Determining Deformation Components According to Data from the Moire and Optically Sensitive Codings Methods"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 237-241

Translation: It is proposed that two methods, the moire and optically sensitive coding methods, be used jointly to divide deformations. Cases of flat deformation and flat stress condition are considered, and computation formulas for various particular instances are derived. Twenty bibliographic entries.

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Forming

UDC: 621.771.0

USSR

POLUKHIN, P.I., VORONTSOV, V.K., CHICHENEV, N.A., and ZOTOV, V.F., Moscow
Institute of Steel and Alloys

"Study of Plastic Flow by the Moire Method"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5,
1970, pp 73-76

Abstract: In a study of plastic flow by the Moire method, the scratches left on the metal after its machining with a planer were used as the initial grid. The selection of the direction and spacing of the initial grid depends on the purpose of the investigation. A lead specimen made of two halves on whose inner surfaces scratches were etched was used in the study. Detailed information was obtained on metal displacements and deformations in the central zone of the specimen and in the region in front of the geometric area of deformation. In the presence of any two Moire patterns, displacements at any point of the factual area of deformation can be determined from a geometric interpretation of the Moire streaks. Equations for the calculation of horizontal and vertical displacements are presented.

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CHICHENIN, Petr Ivanovich

Heath

JPAS: 57841
20 Aug '13

CHICHENIN, Petr Ivanovich

2nd-1

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UZBEK DEPUTY HEALTH MINISTER DISCUSSES ENVIRONMENTAL PROBLEMS

Interview with Deputy Health Minister of Uzbekskaya SSR, P.I. Chichenin by correspondent, Evvarda Vankova, Kuzalain, 26 June 1979, p. 1.

To the streams. To the lake. To the mountains. In a word, nature beckons us not only during vacations but also during our free weekdays. Fishing and hunting gear have become scarce, and along with it—hatchets, boots, tents and camp kettles.

New sites and rest zones, preserves and recreation areas are appearing. The word "ecology" is becoming more and more a household word. Several days ago, an International Day for Protection of the Biosphere was established.

How and his environment. This problem forms the topic of the proposed conversation of our correspondent with Deputy Health Minister of Uzbekskaya SSR, P.I. Chichenin.

Question: Petr Ivanovich, a few words about the reasons for the popularity of the terms "biosphere", "ecology" and "environmental pollution." Why are they being uttered more and more frequently in recent years?

Answer: You have likely seen movies and photographs of the Japanese capital. In recent times, a typical feature of Tokyo has become the oxygen masks. The same points of a typical feature of Tokyo has become the oxygen large cities in Western Europe.

These are troublesome symptoms of the most important ecological problem of contemporary life, i.e. the disappearance of free oxygen in the atmosphere. For us, these terms are not new. The term "ecology" was suggested over 100 years ago by E. Haeckel for designating a new science concerning the interrelationships between animals and the environment surrounding them. We are indebted to Academician V.I. Vernadsky for the term "biosphere"; he is an eminent Soviet geochemist. By the term biosphere or biobiosphere, we express the relationship of the living ambient medium with man's life activity. The outstanding Soviet scientist, N.P. Rojzman, considers that for the normal

USSR

CHICHENIN, P. I., ADILOV, D. A., YUSUPOV, K. Yu., SHARIPOV, M. K., FULATOV, Ya. G., LI GVAN KEVA, V. T., AGZHANOV, N. A., and DZHURAYEV, Kh. D., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Epidemiological Characteristics of Anthrax in Uzbekistan During Recent Years"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

Abstract: In 1949-60 the incidence of anthrax affecting human beings decreased by a factor of three in the Uzbek SSR from that in 1925-48, mainly as a result of immunization of occupationally exposed persons. In recent years the over-all incidence of anthrax among both humans and animals in the Uzbek SSR was reduced by effective prophylactic measures. However, there is no room for complacency, in view of the fact that there was in 1949-60 and especially in 1961-70 an increase in the relative weight of group infections connected with the uncontrolled utilization of meat and of other animal products after obligatory slaughter of diseased farm animals, particularly in the private sector. During the period under consideration, the frequency of anthrax in the Uzbek SSR exceeded that in the USSR by a factor of 3-4, with the number of cases in the Uzbek SSR comprising 10-16% of that in the entire USSR. On the basis of data covering the 1/2

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CHICHENIN, P. I., Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

incidence of anthrax in the past 20 yrs, one can differentiate between three zones in the Uzbek SSR: I) A zone of stable incidence among humans and animals (Tashkentskaya, Surkhandar'inskaya, and Samarkandskaya Oblasts); II) A zone with periodic outbreaks (Andizhanskaya, Khorzemsкая, and Kashkadar'inskaya Oblasts and the KKASSR); III) The zone with the most satisfactory conditions (Bukharskaya, Syrdar'inskaya, Namanganskaya, and Ferganskaya Oblasts). The ratio of cases of human anthrax to those in the entire Uzbek SSR was 62.33, 35.25, and 2.42% in zone I, II, and III, respectively, and that of anthrax of animals 67.13, 32.02, and 0.85% in zone I, II, and III, respectively. In view of the fact that the infection remains in the soil, prophylactic measures in locations at which anthrax has occurred must be carried out constantly regardless of the time that has elapsed since the last outbreak and these measures reinforced at times at which digging into the ground takes place, e.g., in connection with agricultural irrigation.

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Epidemiology

USSR

ZAIROV, K. S., CHICHEGIN, P. I., MUKHAMEDOV, S. M., PULATOV, YA. G., LI-GVAN-KHVA, INZHEVATOVA, M. V., ARTYKOV, K. A., and SEREDIN, V. G.

"Methods and Tactics to be Applied in Detecting Local Foci of Cholera"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

Abstract: With the appearance of the El Tor variety of cholera, endemic foci of this disease developed in a number of countries in which classical cholera could not take root. The reason for this is the capacity of El Tor vibrios to survive for prolonged periods of time in the human organism and the environment. Local cholera foci came developed in which the circulation of the agent is sustained by a chain of atypical diseases, prolonged carrier state of the vibrios in humans, and possibly transmission of the infection by aquatic organisms. Discovery of the carrier state among persons with diseases of the bile secretion system led A. G. Nikonov (1960) to the conclusion that cholera vibrios may be retained for a long time in the gall bladder. He proved the correctness of this conclusion experimentally. During the recent cholera pandemic, vibrios were detected more frequently in the gall bladder. In cases of El Tor cholera, which is caused by hemolytic varieties of the microorganism, it is advisable to determine the titer of antibodies with reference to the hemolytic enzyme found in the supernatant liquid of

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ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

of meat broth cultures. The complement fixation reaction, which has been used as an immunological test for cholera in Russia since 1909, has been forgotten for inadequate reasons. The very small amount of cholera vibrios present in the stool of cholera patients and vibrio carriers can be detected by means of suspended antibodies, among which alizarin, indanthrone, and anthragallo antibodies are used most frequently. Concentration of cholera vibrios on membrane filters follows by supplementary cultivation (Ye. V. Chibrikova, 1960, 1962) made it possible to increase greatly the sensitivity of the immunofluorescence method of detection. A. K. Adamov et al (1969) isolated El Tro vibrios from fish caught in rivers of Turkmenia. According to results obtained by the authors of this article, cholera vibrios may be detected in the intestine of fish even when tests on the water in which the fish have been caught are negative. Testing of fish is therefore recommended as a method for the detection of latent foci of cholera in bodies of water.

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ZAIROV, K. S., SEMIOTROCHEV, V. L., ~~CHICHEVAIN, P. I.~~, MUKHAMEDOV, S. M.,
PULATOV, Ya. G., and LI GVAN KHVA, V. T., Central Asian Scientific Research
Antiplague Institute Ministry of Health Uzbek SSR and Uzbek Antiplague
Station

"Some Problems of the Spread of El Tor Cholera and Its Prophylactic Measures"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14

Abstract: Mild cholera cases and, especially, cholera carriers are not always detected or reported. This is especially true for El Tor cholera, which breaks out in alternating waves, first epidemic, then sporadic. It takes a relatively milder course and is less lethal than ordinary cholera, sometimes resembling a gastrointestinal upset. El Tor vibrios found in water sources in certain areas are lysogenic, in others not. Members of the family and neighborhood of those suffering the disease, particularly preschool children, are often carriers, for a period of about four days after contact. Certain important measures dealing with the sources of infection are suggested: 1) compulsory bacteriological examination of persons arriving from Asian countries 2) Epidemiological examination for cholera for all those suffering gastro-intestinal disturbances 3) development and application of effective methods

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ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14

for curing all forms of cholera 4) setting up various types of installations, ensuring strict sanitary inspection, especially in areas of mass passenger travel.

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USSR

UDC: 911.3.616.927(575.1)

CHICHENIN, P. I., PULATOV, Ya. G., YUSUPOV, K. Yu., LI GVANKHVA, V. T., BADANOVA, L. A., KOVALEVA, F. S.

"The Prevalence of Typhoid-Paratyphoid Infections and the Means for Eradicating them in the Uzbek SSR"

V sb. Materialy XV Vses. s'ezda epidemiologov, mikrobiologov i infektsionistov, Tezisy dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Diseases, Reports of Theses, Part I--collection of works) Moscow, 1970, pp 279 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.250)

[No Abstract]

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Epidemiology

USSR

CHICHENIN, P. I., MUKHAMEDOV, S. M., SEREDIN, V. G., INZHEVATOVA, M. V., and
LI'GVAN KHVA, V. T.

"Contribution to the Taxonomy of El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 42-46

Abstract: During the last 50 years, no agreement has been reached on the true cholera vibrio. Feeley, who studied 220 strains, divided them into five biotypes. However, since all were true cholera vibrios, he regarded the division into the classic cholera vibrios and the El Tor vibrios as invalid. The classification into lysogenic and nonlysogenic strains does not correspond to their virulence. The varying susceptibility of the vibrios to bacteriophages facilitated determination of the geographic distribution of lysogenic El Tor vibrios. Since no classification has been officially approved, it is apparent that there is only one cholera pathogen: *Vibrio cholerae*. The dissimilarities among its variants lie within the limits of genus variability. They all have one common property: they cause cholera in man. Vaccines made with the classic cholera vibrios are effective against El Tor vibrios. In addition to the dissimilarities, there are some biological dissimilarities between classical and El Tor vibrios. The El Tor vibrios survive longer in the external environment, especially in

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CHICHENIN, P. I., et al, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 42-46

water, and are more resistant to antibiotics. Contrary to the classic type, they are all prototrophic. The great vitality of the El Tor vibrios is manifested by their interaction with the classic type in vitro and in vivo. However, no explanation has yet been found for the fact that the El Tor cholera which developed in India in March-April 1964 almost completely displaced the classic cholera. People can carry El Tor vibrios for many years. The ability to produce endemic foci is greater for the El Tor than for classic vibrios. Staple endemic situations induced by El Tor vibrios have recently been observed in the Philippines, Vietnam, Thailand, and Indonesia.

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CHICHENIN, P., Deputy Minister of Health, Uzbek SSR

"The Uninvited Guest: How to Protect Yourself Against the Flu"

Tashkent, Pravda, Vostoka, 24 Jan 70, p 3

Abstract: The individual can combat the flu best by remaining at home at the first signs of the disease, calling the doctor, and observing the basic rules of hygiene. Industrial establishments should maintain optimum temperatures, use quartz and other bactericidal lamps, ventilate the premises frequently, etc. The Uzbek Ministry of Health enforces a strict quarantine, requires sales personnel and others who come in direct contact with the public to wear masks, and stockpiles large quantities of specific therapeutic agents (vaccine, serum, gamma-globulin). The public transportation system helps to spread the disease because of the large numbers of people that use it during rush hours. Rescheduling is urged to reduce the size of the crowds. Frequent disinfection of all trolleys and buses is also recommended.

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SEREDIN, V. G., CHICHENIN, P. I., MUKHAMEDOV, S. M., and INSHEVATOVA, M. V.

"The Problem of the El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 3-7

Abstract: In recent years, cholera has been caused mainly by the El Tro vibrio. It was first discovered in pilgrims toward the end of the 19th Century in the El Tor Quarantine Station on the Sinai Peninsula. In 1905, when mortality from dysentery increased among pilgrims quarantined at the El Tor Station, Gotschild was sent there to investigate the possible presence of cholera vibrios among the pilgrims. From 107 cadavers, he isolated 36 vibrio strains, identifying six as cholera vibrios, since they were identical with cholera vibrios in all aspects and were agglutinated by anticholera serum. However, both groups were able to produce true hemolysis in goat and sheep erythrocytes. They contained a hemotoxin and exotoxin which are characteristic of the non-cholera Nasik vibrios. Furthermore, their antitoxic sera caused cross neutralization but no cross agglutination. For these reasons, the El Tor vibrios were not regarded

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SEREDIN, V. G., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 3-7

as cholera-producing. However, most Russian scientists, especially those who worked during the 1908-1909 cholera epidemic in Petersburg, were of a different opinion. They found that with diminishing enzymatic activity, the strains would lose their hemolytic ability. By 1938, the number of identified strains of El Tor vibrios increased to 50. Doorenbos considered them to be cholera-producing vibrios affected by phages. The first cholera outbreak caused by EL Tor vibrios was recorded in 1937 on Sulawesi Island, and the second outbreak, caused by hemolytic vibrios, was recorded in 1945 in India. This gave rise to a polemic about the exact definition of true cholera vibrios, and was followed by extensive investigations of various strains with regard to their morphological, biological, biochemical, serological, and cultural properties. Numerous tests were developed which revealed, among other things, that the hemolytic ability of the vibrios was variable and perishable. As a result, the EL Tor vibrios were divided into three groups: constantly hemolytic, constantly nonhemolytic, and weakly hemolytic, even though hemolysin is not essential in the pathogenesis of cholera. In 1964,

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USSR

SEREDIN, V. G., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, no L, 1970, pp 3-7

Nobechi isolated strains of the classic cholera vibrios, which were resistant to Mukerjee phage IV. These strains were called intermediate. It was concluded that El Tor vibrios, both pathogenic and non-pathogenic, also occupy an intermediate phylogenetic position and are the predecessors of classical cholera strains.

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1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE UNINVITED GUEST: HOW TO PROTECT YOURSELF AGAINST THE FLU -U-
AUTHOR--CHICHENIN, P. C
COUNTRY OF INFO--USSR
SOURCE--TASHKENT, PRAVDA VUSTOKA, 24 JAN 70, P 3
DATE PUBLISHED--24JAN70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INFLUENZA, DISEASE CONTROL, INFLUENZA VACCINE, BLOOD SERUM,
GAMMA GLOBULIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0081 STEP NO--UR79014/70/000/000/0003/0003
CIRC ACCESSION NO--AN0113059
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AN0113059

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INDIVIDUAL CAN COMBAT THE FLU BEST BY REMAINING AT HOME AT THE FIRST SIGNS OF THE DISEASE, CALLING THE DOCTOR, AND OBSERVING THE BASIC RULES OF HYGIENE. INDUSTRIAL ESTABLISHMENTS SHOULD MAINTAIN OPTIMUM TEMPERATURES, USE QUARTZ AND OTHER BACTERICIDAL LAMPS, VENTILATE THE PREMISES FREQUENTLY, ETC. THE UZBEK MINISTRY OF HEALTH ENFORCES A STRICT QUARANTINE, REQUIRES SALES PERSONNEL AND OTHERS WHO COME IN DIRECT CONTACT WITH THE PUBLIC TO WEAR MASKS, AND STOCKPILES LARGE QUANTITIES OF SPECIFIC THERAPEUTIC AGENTS (VACCINE, SERUM, GAMMA GLOBULIN). THE PUBLIC TRANSPORTATION SYSTEM HELPS TO SPREAD THE DISEASE BECAUSE OF THE LARGE NUMBERS OF PEOPLE THAT USE IT DURING RUSH HOURS. RESCHEDULING IS URGED TO REDUCE THE SIZE OF CROWDS. FREQUENT DISINFECTION OF ALL TROLLEYS AND BUSES IS ALSO RECOMMENDED. FACILITY: MINISTER OF HEALTH, UZBEK SSR.

UNCLASSIFIED

USSR

UDC 621.391.63

AVTONOMOV, V. A., BORISOV, B. S., GRUDININ, A. S., VARLAMOV, I. V., KANDYBA, Pe, Ye., KOLYASNIKOV, V. A., KRASYUK, B. A., MESKIN, S. S., PETRUSEVICH, V. A., POLTORATSKIY, E. A., RAVICH, V. N., and CHICHERIN, L. A.

"High-Speed Optical-Electronic Switch"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, Issue 2(28), pp 3-8 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B321)

Translation: An optical-electronic pair is developed, on the basis of which a hybrid microcircuit is produced which assures a high galvanic decoupling and is compatible with respect to the input and output parameters with integrated logic circuits manufactured by domestic industry. 4 ill. 4 ref. Summary.

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Microelectronics

USSR

UDC: 681.325.65

DSHKHUNYAN, V. L., OVCHINNIKOV, V. V., CHICHERIN, Yu. E.

"A Multiple-Threshold Logic Element"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319077, Division H, filed 30 Jul 70, published 28 Oct 71, p 177

Translation: This Author's Certificate introduces a multiple-threshold logic element which contains a linear adder based on resistors, controlled by input diodes, and connected through biasing diodes with interconnected cathodes to a series circuit comprised of summing resistors and a multi-threshold discriminator. As a distinguishing feature of the patent, the design provides for increased speed and utilization of components which can be readily made in integrated-circuit form. The multithreshold discriminator is made in the form of several parallel-connected single-threshold discriminators based on a transistor with grounded emitter. The base of the transistor is connected to the collector of another transistor whose emitter is connected to the corresponding summing resistor, while the collector is connected to the base of the corresponding transistor in the preceding discriminator.

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AA9 046521

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,
6-69

228719 TRIGGER CIRCUIT containing two chains of logical elements "AND"/"NOR" in which increased reliability is obtained by connecting to the inputs of each chain to the outputs of the trigger in a logical "AND" and the outlets of the second chain in a logical "OR". Tags (13), (14) and (15), (16) constitute respectively the inputs and outputs of the first chain. Tags (17), (18) and (19), (20) of the second.

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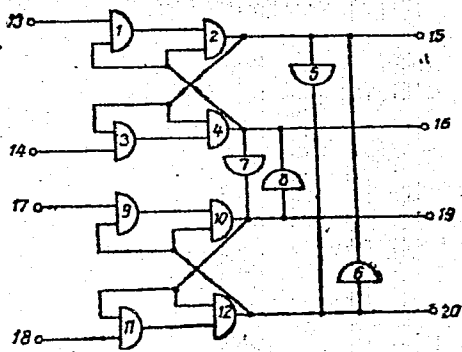
29.8.67 № 1182047/26-24. A.I. KOEKIN & YU.E. CHICHERIN (13.2.69) Bul 32/17.10.68.Class 21a, Int.Cl.H 03k.

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USSR

UDC: 681.325.65:621.382

CHICHERIN, Yu. Ye., OVCHINNIKOV, V. V., DSHKHUNYAN, V. L., VDOVICHENKO,
A. P.

"A Threshold Logic Element"

USSR Author's Certificate No 318163, filed 30 Jul 70, published 27 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7,
Jul 72, Abstract No 7A58 P)

Translation: The Author's certificate presents a logic element of the threshold type which contains a linear adder based on resistors and controlled by input diodes and which is connected, through biasing diodes with interconnected cathodes, to a discriminator. To improve the degree of integration and increase resistance to climatic effects as well as to simplify the device, the discriminator is based on a single two-emitter transistor with a collector resistor having one emitter connected to the linear adder and a bias resistor, while the second emitter is connected to a grounding line. The base of this transistor is connected to the grounding line through a biasing resistor. One illustration.

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USSR

UDC 681.326.36

KOYEKIN, A. I., CHICHERIN, Yu. Ye.

"A Logic Device With Standby Provisions"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287113, class 21, filed 21 Feb 69, published 19 Nov 70, p 62

Translation: This Author's Certificate introduces a logic device with standby provisions based on AND-NOT/OR-NOT elements. The device contains a combination logic circuit with standby provision, and a flip-flop with standby provision. As a distinguishing feature of the patent, the reliability of the device is improved and speed is increased by connecting the direct information outputs of the first channel of the combination circuit to the set terminal of the flip-flop in the first channel, while the inverse information outputs of the second channel of the combination circuit are connected to the reset terminals of this same flip-flop. The inverse information outputs of the third channel of the combination circuit are connected to the reset terminal of the flip-flop in the second channel. The inverse information outputs of the combination circuit are joined together in a majority hook-up and connected to the set terminal of the flip-flop in the

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USSR

KOYEKIN, A. I., CHICHERIN, Yu. Ye., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287113, class 21, filed 21 Feb 69, published 19 Nov 70, p 62

second channel. The direct controlling outputs of the combination circuit are connected to the set terminal of the flip-flop in the first channel, to the reset terminal of the flip-flop in the first channel and the set terminal of the flip-flop in the second channel, and to the reset terminal of the flip-flop in the second channel respectively. The inverse controlling outputs of each channel in the combination circuit are joined together in an AND-NOT circuit and connected to the set terminals of the second control stage of the flip-flops in the first and second channels, to the reset terminal of the second control stage of the flip-flop in the first channel and the set terminal of the second control stage of the flip-flop in the second channel, and to the reset terminals of the second control stage of the flip-flops in the first and second channels respectively.

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- 23 -

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TELOMERIZATION OF TETRAFLUOROETHYLENE BY DIPHENYL DISULFIDE -U-
AUTHOR--(04)-YAKUBOVICH, A.YA., ZAYTSEVA, YE.L., ROZANTSEVA, T.V.,
CHICHERINA, I.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 886-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THIOPHENE, OXIDATION, FLUORINATED ORGANIC COMPOUND,
TAUTOMERISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1275 STEP NO--UR/0366/70/006/004/0886/0887
CIRC ACCESSION NO--AP0134949
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION (AT 175DEGREES) GAVE 30.3PERCENT PHSCF SUB2 CF SUB2 SPH (I), 8.7PERCENT PHS(CF SUB2) SUB4 SPH, AND SMALL AMTS. OF PHSCF SUB2 CF SUB2 H (II) AND 2,2,3,3,TETRAFLUORODIHYDROBENZOTHIOPHENE. THE OXIDN. OF I OR II WITH CRO SUB3 IN ACOH SOLN. GAVE PHSO SUB2 CF SUB2 CF SUB2 SO SUB2 PH OR PHSO SUB2 CF SUB2 CF SUB2 H, RESP. FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THE PREOPERATIVE MANAGEMENT AND CRITERIA OF PATIENT'S READINESS FOR
PNEUMONECTOMY -U-
AUTHOR--~~CHICHETKA, A. A.~~
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP
22-25
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SURGERY, LUNG, RESPIRATORY SYSTEM DISEASE, PROTEIN, ALBUMIN,
GLOBULIN

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0850 STEP NO--UR/0589/70/104/003/0022/0025
CIRC ACCESSION NO--AP0102811
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0102811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER THE ANALYSIS OF INDICES OF THE PREOPERATIVE PREPARATION IN 300 PATIENTS WITH CHRONIC SUPPURATIVE LUNG DISEASES IS PRESENTED. THE CRITERIA OF THE PATIENTS' READINESS FOR PULMONARY RESECTION ARE DETERMINED AS WELL AS CONTRAINDICATIONS TO SUCH KIND OF SURGERY. THE CRITERIA OF ADEQUATE PREPAREDNESS OF PATIENTS FOR PNEUMONECTOMY SHOULD BE AS FOLLOWS: STABLE REMISSION OF THE INFLAMMATORY PROCESS, NORMALIZATION OF THE BODY TEMPERATURE AND CLINICAL BLOOD PICTURE, EXCLUDING THE SEDIMENTATION RATE, CESSATION OF SPUTUM DISCHARGE OR ITS REDUCTION UP TO 25-50 ML A DAY, NORMAL TOTAL PROTEIN VALUES, ALBUMIN GLOBULIN COEFFICIENT NOT LOWER THAN 1, THE MAJORITY OF INDICES OF EXTERNAL RESPIRATION NOT LESS THAN 50PERCENT WITH RESPECT TO NORMALITY.

UNCLASSIFIED

AA0051848 CHICHIGIN I.B. 0482 11

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239597 INDUCTIVE LEVEL METER where a float can move freely along the inductive coils indicating its position corresponding to the measured level. The float has been improved, it has two flanges which make it possible to obtain a parallel reading from two independent coils.

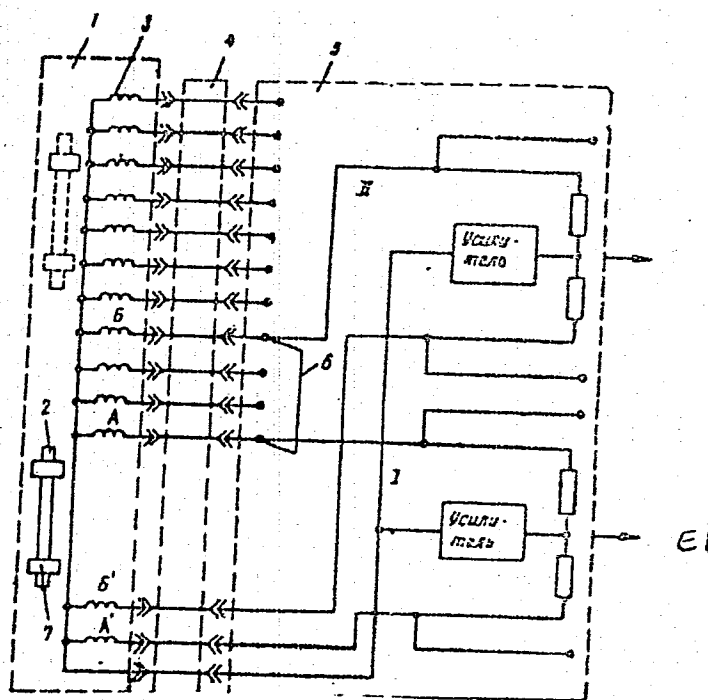
12.12.66 as 1119046/26-10. A.S. ABRAMOV et al.
(28.7.69) Bul 11/18.3.69. Class 42e. Int.Cl.G 01f.

AUTHORS: Abramov, A. S.; Zotov, S. V.; Maslov, G. S.; Vargin, B.A.;
Shorin, N. I.; Kornyuushin, P. M.; Mirskoy, B. I.; Chistyakov, N. N.;
Mosyakov, V. A.; Kozlovskiy, G. V.; Chichigin, I. B.; Batov, V. A.;
Golovachev, V. T.; Lyakhterov, M. N.; Kobelev, Yu. M.

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AA0051848



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N/A

USSR

UDC: 621.317.765.8

GLADKIKH, G. A., PANOV, V. G., PAKHOMOV, I. P., and CHICHIK, P. D.

"Infra-Low Noise Frequency Generator"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 124-125

Abstract: The instrument described in this paper is designed for tuning measurement devices by producing electrical noise in the frequency range of 0-1 kHz. Known in spectrometry as the method of heterodyning to zero, the basis principle of the instrument is to shift the noise spectrum into the infra-low frequency range. As shown by the accompanying block diagram, the instrument consists of a noise source feeding through a matching stage to a band-pass amplifier, and thence to a multiplier, where it is mixed with the output of a heterodyning oscillator. The beat frequencies are then put through a low-pass filter. The noise source is a silicon stabilatron of the D814V type connected in series with a MP111 silicon transistor, and the heterodyning oscillator uses 1T403V transistors, its tuned circuit being resonant to 35 kHz. A circuit diagram of the noise generator is given.

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USSR

UDC 531.1

KOSHLIYAKOV, V. N., LYUSIN, YU. B., and CHICHINADZE, M. V., Moscow

"Ballistic Deviations of a Correctable Gyrocompass"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4, Jul-Aug 73, pp 105-111

Abstract: The authors study the ballistic deviations of a correctable gyro-course-indicator with a fluid-torsion suspension of the sensing element. In contrast to the view where it is accepted that the orientation of the main axis of the gyroscope corresponds to the presence of a small velocity deviation, the authors analyze a case where the correcting moments are selected in such a way that in undisturbed motion they correspond to the orientation of the gyroscope axis in the plane of the real meridian, while they correspond to the orientation of the equatorial plane of the tracking sphere of the unit in the plane of the real horizon. Formulas are given for the various parts of the gyro-course-indicator. These are given within the framework of precession theory. The unit itself is described in earlier literature.

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ON THE ORIENTED EMANATION OF THE MOVING VIBRATOR, EXCITED THE
SEISMIC OSCILLATIONS AS A SINUSOIDAL SIGNAL WITH LINEARLY MODIFIED
AUTHOR--CHICHININ, I.S., YEVCHATOV, G.P.
C
COUNTRY OF INFO--USSR
SOURCE--GEOLOGIYA, I GEOFIZIKA, 1970, NR 1, (121) PP 102-109
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--SEISMIC WAVE, SEISMOGRAPH, OSCILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1288 STEP NO--UR/0210/70/000/001/0102/0109
CIRC ACCESSION NO--AP0103170
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103170

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT SHOWN THAT THE VIBRATOR MOVED ONCE THROUGH THE PROFILE EXCITES THE SEISMIC WAVES WITH WEAKLY DEVELOPED ORIENTATION EFFECT. THE WAVES, JAMMING (WITH LOW SEEMED VELOCITIES) ARE ESSENTIALLY DECREASED IN AMPLITUDE IN THE CASE OF VIBRATOR MOVEMENT WITHIN THE LIMITS OF SOME BASE DURING THE WORK AND "RUN" ALONG THE TIME AXIS OF THE SEISMOGRAM.

UNCLASSIFIED

0123

USSR

UDC 615.212.7:547.9437.074:543.544

CHICHIRO, V. YE., KOSTENNIKOVA, Z. P., and MEKHTIKHANOV, S. D., Moscow Central
Pharmaceutical Scientific-Research Institute

"Densitometric Determination of Opium Alkaloids with Use of Thin-Layer Chroma-
tographic Separation"

Moscow, Farmatsiya, Vol XX, No 6, Nov-Dec 71, pp 37-42

Abstract: Spectrophotometric determination of the principal opium alkaloids following separation in a thin layer of sorbent (and also on paper, in combination with use of densitometry), has been practiced for roughly a decade. However, quantitative densitometric determination following separation in a thin layer of sorbent has not been developed.

Using the Soviet-developed DI-3 densitometer, the authors made quantitative determinations of five alkaloids for tincture of opium (3.1% alkaloids) and opium powder (29.27%), arriving at the following figures: morphine, 0.98% and 11.46%; codein, 0.35% and 4.36%; thebaine, 0.14% and 1.69% papavarine, 0.28% and 3.26%; and narcotine, 1.32% and 8.5%. These figures are in close agreement with those obtained with use of the method prescribed by the USSR State Pharmacopoeia, 10th ed.

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USSR

CHICHIRO, V. YE., et al., Farmatsiya, Vol XX, No 6, Nov-Dec 71, pp 37-42

It was demonstrated that thin-layer chromatography and paper chromatography are of equal sensitivity, but that the interval of direct proportionality between concentration and the optical density of the alkaloids is much greater with use of the thin-layer technique (5-60 μ g, as against 5-25 μ g). A distinct advantage of thin-layer chromatography in the analysis of opium alkaloids is that it requires only a third of the time needed for paper chromatography. Full details of the laboratory methods used, along with graphic and tabular data from the results, are included in the paper.

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USSR

UDC:: 615.45:615.783.1

CHICHIRO, V. Ye., SURANOVA, A. V., BRUTKO, L. I., DROZHZHINA, V. V., Central
Pharmaceutical Scientific Research Institute

"A Method of Synthesizing the Morphine Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 15, May 71, Author's Certificate No 302342, Division C, filed 27 Mar 70,
published 28 Apr 71, p 80

Translation: This Author's Certificate introduces a method of synthesizing the
morphine base from morphine hydrochloride by portion between a phosphate
buffer solution and chloroform. As a distinguishing feature of the patent,
the quality of the produce is improved by using a phosphate buffer solution
with pH of 6.5-7.0

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USSR

UDC 615.31:547.94].074:543.54

CHICHIRO, V. YE., Central Pharmaceutical Scientific Research Institute
Moscow

"The use of Thin Layer Chromatography for Determination of Optimal pH
of Buffer Solutions in Separating Alkaloids by Countercurrent
Distribution"

Moscow, Farmatsiya, Vol 19, No 6, Nov-Dec 70, pp 44-49

Abstract: A rapid method has been developed for determination of optimal pH of buffer solutions for the separation of alkaloids by countercurrent distribution according to their R_f values on thin layer chromatography. An inverse relationship has been established between the R_f of alkaloids and optimal Ph value of buffer solutions. Having plotted the R_f as a function of pH, the curve was subjected to mathematical treatment and an equation was derived determining the relationship between the R_f and optimal pH

$$pH_{opt} = 7.7 \pm .91 R_f - 12$$

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USSR

UDC 621.438.038

BUGRIM. L. I., DIKIY, N. A., and CHICHKAN', L. A.

"A Mock-up for the Investigation of Thermoregulatory Apparatus in Gas Turbine Engines Using the Method of Structural Synthesis"

Nikolayev, Tr. Nikolayev. korablestroit. in-ta (Transactions of the Nikolayev Shipbuilding Institute) Vyp. 51, 1972 pp 64-72 (from Referativnyy Zhurnal -- Turbostroyeniye, No 7, 1972, abstract No 7.49.140)

Translation: The question of the synthesis of model gas turbine engines for the adjustment of thermoregulatory apparatus under laboratory conditions is considered. The controlling device of the model was produced with the method of structural synthesis of nonlinear systems. An experiment on transient flow was carried out on an analogue computer MN-7M. An evaluation of the precision of the model followed from the principle of comparison of the experimental results with transients of a real gas turbine engine. (4 illustrations, 7 bibliographical entries)

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1/2 012 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF KILLING TECHNOLOGY ON THE PROPERTIES OF A STEEL WITH
REDUCED HARDENABILITY -U-
AUTHOR--ASTROV, YE.I., LOGANOV, M.I., URZOVA, V.A., CHICKHANDV, A.I.
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2) 55-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--NONMETALLIC INCLUSION, KILLED STEEL, ALUMINUM CONTAINING
STEEL, STEEL MANUFACTURE PROCESS, STEEL HARDENING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1291 STEP NO--UR/0129/70/000/002/0055/0057
CIRC ACCESSION NO--AP0106072
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106072

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF KILLING WERE USED: (1) DEEP KILLING IN THE FURNACE WITH FERROSILICON, FERROTITANIUM, AND AL; (2) DEEP KILLING IN THE FURNACE WITHOUT SI, BUT WITH AL AND FERROTITANIUM. SI, WITH ADDNL. PORTIONS OF AL, WERE INTRODUCED INTO THE LADLE THE STEEL WAS KILLED. TO EXCLUDE THE EFFECT OF CHEM. COMPN. OF THE STEELS ON HARDENABILITY, ALL OF THE EXPTL. MELTS WERE COMPOSED OF SINGLE CHEM. COMPNS. HARDENABILITY WAS DETD. BY ROCKWELL HARDNESS ALONG END QUENCHED CYLINDRICAL SPECIMENS. MELTS, DEEP KILLED WITHOUT SI, WITH SI ADDED TO THE LIQ. STEEL FOLLOWED BY AL AND FERROTITANIUM, SHOW LOWER HARDENABILITY AND CONTAIN LESS AMTS. OF O AND NONMETALLIC INCLUSIONS.

UNCLASSIFIED

Acc. Nr.

AA0108179

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code
UR 0482

135550m Tool steel. Zaichenko, S. S.; Polushkin, N. A.;
Kalmykov, Yu. D.; Chichkanov, A. I.; Shevchenko, V. L.;
Biryukova, V. N.; Aref'ev, B. V. U.S.S.R. 260,900 (Cl. C 22c),
08 Jan 1970, Appl. 25 Jul 1968; From *Otkrytiya, Izobret., Prom.*
Obraztsy, Tovarnye Znaki 1970, 47(4), 81. Tool steel contg.
lower amts. of scarce materials consisted of: C 0.50-0.65, Si
0.60-0.90, Mn 0.20-0.40, Cr 6.5-8.0, Mo 1.1-1.5, W 0.7-1.1,
V 0.10-0.25, Ti 0.05-0.15%, Fe and impurities the remainder.
MSCL

REEL/FRAME

19891845

USSR

UDC 615.216.5.015.45:612.13

RAYSKIY, V. A., ROZONOV, Yu. B., and CHICHKANOV, G. G., Moscow Institute of Psychiatry, RSFSR Ministry of Health, and Institute of Pharmacology, Academy of Medical Science USSR

"Nature and Mode of Action of Diazepam on Some Parameters of the Blood Circulation"

Moscow, Terapevticheskiy Arkhiv, No 8, 1973, pp 35-39

Abstract: Peroral administration of diazepam had no significant effect on the pulse rate, blood pressure, or EKG of cardiac patients with or without postinfarction neurotic manifestations. However, parenteral injection of the drug produced moderate hypotension, weak or moderate bradycardia and, in some cases, tachycardia. Experiments on cats showed that the hypotensive effect of diazepam is caused by a decrease in vascular tone resulting mainly from inhibition of the central regulation of sympathetic tone. The drug also relaxed briefly the smooth musculature of the vascular walls.

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1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ALKALINE SPLITTING OF BETA ACETYLENIC ALCOHOLS -U-
AUTHOR--(04)-VLASOV, V.M., MEDVEDEVA, A.S., CHICHKAREVA, G.G., SAFRONOVA,
L.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 944-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALCOHOL, CHEMICAL DECOMPOSITION, ACETYLENE, DEHYDRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1306 STEP NO--UK/0062/70/000/004/0944/0945
CIRC ACCESSION NO--AP0134980
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0134980
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 15 G 1, PENTYN, 4, OL WITH 25
G KOH UNDER ET SUB2 O RESULTED IN INTENSIVE EVOLUTION OF GAS AT
55-60 DEGREES, CONTG. C SUB2 H SUB2 AND MECTRIPL E BOND CH; AT 9508 DEGREES
THE GAS CONSISTED OF MEC TRIPLE BOND CH PREDOMINANTLY. 1, BUTYN, 4, OL
AND KOH HEATED TO 75-90 DEGREES GAVE C SUB2 H SUB2, BUT AT 100-15 DEGREES
GAVE MAINLY MEC TRIPLE BOND CH. THE LATTER ALC. DECOMP. LESS READILY
THAN DID THE FORMER. EVIDENTLY THE DECOMP. INTO C SUB2 H SUB2 AND
ALKYLENE OXIDE AT THE LOWER TEMP. IS ALTERED BY HIGHER TEMP. INTO
FORMATION OF UNSATD. ALC.; WHICH UNDERGOES ALLENIC REARRANGEMENT AND
DEHYDRATION TO FORM MEC TRIPLE BOND CH AND RCHO. THE REACTION WAS
FOLLOWED BY CONVERSION OF THE GASEOUS PRODUCTS INTO CU SALTS AND THEIR
IDENTIFICATION. FACILITY: IRKUTSK. INST. ORG. KHIM., IRKUTSK,
USSR.

UNCLASSIFIED

USSR

UDC: 577.4

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GAVRILOV, M. A., DEVYATKOV, V. V., POTEKHIN, A. I., ~~CHICHKOVSKIY, A. B.,~~
PUPYREV, Ye. I.

"Technical Requirements for an Automated System for Logical Synthesis of Discrete Controlling Devices. Using Procedures of Dialog With a Computer in Synthesizing Such Devices. By Way of Discussion"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54), pp 62-112
(from RZh-Kibernetika, No 5, May 72, Abstract No 5V325)

[No abstract]

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172 013 UNCLASSIFIED PROCESSING DATE--ZUNOV70
TITLE--EVALUATION OF THE DESIGNS OF PNEUMATIC FLOTATION MACHINES --U-
AUTHOR--(03)--MAKOVSKIY, N.D., SERGEYEV, S.F., CHICHVAROV, V.M.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(4), 82-5
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--PNEUMATIC DEVICE, FLOTATION, COPPER ORE, PRODUCTION
EFFICIENCY, ORE BENEFICATION EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1906 STEP NO--UR/0136/70/043/004/0082/0085
CIRC ACCESSION NO--AP0132168
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPTL. MODEL OF A PNEUMATIC FLOTATION MACHINE (A) OF CHAMBER VOL. 1.6 M³ AND DEPTH 760 MM IS COMPARED WITH A STANDARD MECH. FLOTATION MACHINE (B). IN ALL CASES, THE EXTN. OF CU WAS GREATER IN A THAN IN B. THE PRODUCTIVITIES OF A AND B WERE 5-6.5 AND 2.5-3.0 M³ PRIME³-MIN, RESP. THE CU CONTENT OF THE TAILINGS WAS 0.05-0.13PERCENT LOWER, THE CU CONTENT OF THE UNCENTRATE WAS 0.35-1.35PERCENT LOWER, AND THE EXTN. WAS 2.5-9.0PERCENT HIGHER IN A THAN IN B. THE USE OF A INNUMEROUS FACTORIES IN PLACE OF CONVENTIONAL FLUTATION MACHINES SHOWS THAT THE FLOTATION RATE CAN BE INCREASED ON THE AV. BY 40PERCENT, AND THAT THE ENERGY CONSUMPTION CAN BE REDUCED BY 30-50PERCENT.

UNCLASSIFIED

USSR

UDC: 612.825.266

KAPANADZE, T. K., and CHIDZHAVADZE, E. O., Institute of Physiology, Academy of Sciences of the Georgian SSR

"Influence Which Electrical Stimulation of the Olfactory Bulbs Has on the Behavior and Electrical Activity of the Neo- and Archipaleocortex of a Cat"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 437-440

Abstract: The paper analyzes the results of experiments done to determine the influence of stimulation of the olfactory bulbs on the behavior of the neo- and archipaleocortex. The experimental animals were cats with implanted electrodes. An electrical stimulus comprised of high-frequency square pulses was used. A spectral analysis was done and waves of different frequencies were integrated for a five-second period on the electroencephalogram. The following rhythms were integrated in each period: delta (2-4 Hz), theta (4-8 Hz), alpha (8-13 Hz), beta-one (13-20 Hz), beta-2 (20-30 Hz). Differences were observed in both behavioral and encephalographic changes when different strengths of electric pulses were used to stimulate the olfactory bulbs. Protracted but weak stimulation (1.5-3 V)

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USSR

KAPANADZE, T. K., CHIDZHAVADZE, E. O., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 437-440

causes drowsiness accompanied by synchronous high-amplitude waves in both the old and new cortex. In the case of a short-action stimulus, cessation is followed by desynchronization, which correlates with behavioral arousal. A stronger electrical stimulus of the olfactory bulbs against a background of a sleepy state induces desynchronization of the electrical activity of both the neo- and archipaleocortex. If stimulation leads to encephalographic arousal without behavioral awakening, no autonomic shifts are observed. Intensifying stimulation of the olfactory bulbs leads to desynchronization of the EEG and behavioral arousal accompanied by considerable shifts in the EEG. Strong stimulation in the wakeful state induces licking and sniffing. At the same time, the animals refuse to feed. Upon cessation of the stimulus, feeding behavior is activated in animals even though they are full. It is assumed that inhibition of feeding behavior is due to the direct action of the olfactory bulbs on the hunger center of the lateral hypothalamus. Above-threshold stimulation during wakefulness leads to the development of epileptiform discharges in the archipaleocortex. This is another indication of strong functional connections between the olfactory bulbs and rostral

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USSR

KAPANADZE, T. K., CHIDZHAVADZE, E. O., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 437-440

structures of the limbic system. It is concluded that the olfactory bulbs, while taking care of the function of smelling, may also participate in the sleep-wakefulness cycle on the one hand, and in regulating feeding and defensive behavior on the other hand. In particular, the olfactory bulbs may have an inhibiting effect on the hunger center in the lateral hypothalamus, and an intensifying effect on defensive reactions.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF THE DEGREE OF DISPERSION AND COMPOSITION OF SILICEOUS
FILLERS OF RUBBER ON FILLER REINFORCING ACTION -U-
AUTHOR--(04)--KUKHARSKAYA, E.V., CHIGAREVA, O.G., SKORIK, YU.I., GILEVA,
K.G.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3), 21-3
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FILLER, SYNTHETIC RUBBER, SILICA, ALKALINE EARTH METAL,
STYRENE/(U)SKMS30RP SYNTHETIC RUBBER, (U)AEROSIL SILICEOUS FILLER,
(U)ULTRASIL VN3 SILICEOUS FILLER, (U)HISIL SILICEOUS FILLER, (U)BS50
SILICEOUS FILLER, (U)ZEOLEX25 SILICEOUS FILLER
CENTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0838 STEP NO--UR/0138/70/029/002/0021/0023
CIRC ACCESSION NO--AP0124505
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0124505

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RUBBER MIXT., CONTG. SKMS-30RP AS ITS MAIN COMPONENT, WAS FILLED WITH SEVERAL SILICEOUS FILLERS, E. G., AEROSIL 300, ULTRASIL VN-3, HI-SIL, SILOXIDE, BS-50 (I), ZEOLEX-25 (II), AND ZEOLEX-23 (III), AND THE MIXT. WAS EXAMD. MICROSCOPICALLY. NO CORRELATION WAS OBTAINED BETWEEN THE DEGREE OF DISPERSION OF A FILLER AND ITS REINFORCING EFFECT. THE REINFORCING EFFECT OF THE FILLERS WAS INVERSELY PROPORTIONAL TO THE CONTENT OF ALK. AND ALK. EARTH CATIONS; THUS III, II, AND I WERE THE LEAST EFFECTIVE FILLERS. FACILITY: INST. KHIM. SILIKATOV IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REARRANGEMENT OF DIMETHYLBENZYL,2, HYDROXYETHYLAMMONIUM CHLORIDE -U-
AUTHOR--(02)--KUZNETSOV, S.G., CHIGAREVA, S.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 881-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR STRUCTURE, ALKYLATION, AMMONIUM CHLORIDE, BENZENE
DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2159 STEP NO--UR/0366/70/006/004/0881/0882
CIRC ACCESSION NO--AP0125742
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125742

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING (HOCH SUB2 CH SUB2 NME
SUB2 CH SUB2 PH) PRIME POSITIVE CL PRIME NEGATIVE AT 175-80DEGREES
SIMILAR TO 6 HR IN A SEALED TUBE GAVE PHCH SUB2 OCH SUB2 CH SUB2 NME
SUB2.HCL (I), TOGETHER WITH SMALL AMTS. PHCH SUB2 OCH SUB2 CH SUB2
NMECH SUB2 PH (II). LONGER HEATING INCREASED THE AMT. II AND DECREASED
THE AMT. I. I IS FORMED BY AN INTRAMOL. REARRANGEMENT AND II BY
INTERMOL. N-ALKYLATION. FACILITY: INST. TOKSIKOL., LENINGRAD,
USSR.

UNCLASSIFIED

USSR

UDC 621.375.82

BONCH-BRUYEVICH, A. M., KOSTIN, N. N., PRZHIBEL'SKIY, S. G., KHODOVOY, V. A.,
KHROMOV, V. V., CHIGIR', N. A.

"Resonance Nonlinear Phenomena in Elementary Noninteracting Systems"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 75-95 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D861)

Translation: A study was made of nonlinear phenomena in sets of elementary noninteracting systems under the effect of powerful radiation as a function of its spectral composition. The displacement and splitting of the D-absorption lines of the chief doublet of the K atom in the radiation field of a ruby laser were investigated experimentally. Nonlinear phenomena were detected in connection with the variation of the refraction coefficients of the atomic vapors of Rb and K in a laser radiation field with a broad spectrum ($\Delta \lambda = 10$ nm) (the variation of the polarization, focusing, and defocusing of the radiation passing through the vapor, induced parametric scattering). Intense directional radiation was observed in a number of transitions of the Rb atom on excitation by a laser in a pigment ($\lambda = 775-795$ nm). The phenomenon of nonlinear population of the excited states of the K and Rb molecules with nonuniformly broadened absorption bands was detected and investigated.

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BONCH-BRUYEVICH, A. M., et al., Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp -- 75-95

A study was made of the saturation kinetics of the absorption in red bands of Rb molecules under the effect of ruby laser radiation. It was established that the absorption decreases uniformly along the entire band and is restored within $2 \cdot 10^{-2}$ seconds. These phenomena are explained by dissociation and reduction of the Rb molecules. The results of all of the experiments were compared with the theoretical calculations. The bibliography has 10 entries.

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USSR

UDC 519.2:621.391

CHIGAR'KOV, G. K., and LAPINSKAYA, YE. V.

"Spectrum of Orthogonal Signals Coinciding in Shape With Legendre Polynomials"

Tr. Mosk. in-ta radiotekhn., elektron. i avtomatiki (Proceedings of the Moscow Institute of Radio Engineering, Electronic, and Automation), No 47, 1970, pp 226-230 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V224, by Ya. Kogan)

Translation: The signals examined are of the form

$$s_n(t) = \begin{cases} P_n\left(\frac{t}{T}\right) & \text{when } -T \leq t \leq T, \\ 0 & \text{when } |t| > T, \end{cases}$$

where $P_n(x)$ is a n -th-order Legendre polynomial. The authors derive a recursive formula for spectral densities based on the recursive relation for Legendre polynomials:

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$$\mathfrak{S}_n(j\omega) - \frac{2n-1}{j\omega T} \mathfrak{S}_{n-1}(j\omega) - \mathfrak{S}_{n-2}(j\omega) = 0,$$

USSR

CHIGAR'KOV, G. K., and LAPINSKAYA, YE. V., Tr. Mosk. in-ta radiotekhn., elektron. i avtomatiki, No 47, 1970, pp 226-230

where

$$\tilde{S}_n(j\omega) = \int_{-T}^T S_n(t) e^{-j\omega t} dt.$$

By solving this recursive equation, the authors derive explicit formulas of spectral densities for orthogonal systems of even and odd order

$$\begin{aligned} S_{2n}(j\omega) &= \frac{2T(-1)^n}{\sqrt{1 - \left(\frac{4n-1}{2\omega T}\right)^2}} \left[jT_{2n} \left(\frac{4n-1}{2\omega T} \right) \left(\frac{\sin \omega T}{\omega^2 T^2} + \right. \right. \\ &\quad \left. \left. + \frac{\cos \omega T}{\omega T} \right) + V_{2n-1} \left(\frac{4n-1}{2\omega T} \right) \frac{\sin \omega T}{\omega T} \right]; \\ S_{2n+1}(j\omega) &= \frac{2T(-1)^n}{\sqrt{1 - \left(\frac{4n+1}{2\omega T}\right)^2}} \left[jV_{2n+1} \left(\frac{4n+1}{2\omega T} \right) \times \right. \\ &\quad \left. \times \left(\frac{\sin \omega T}{\omega^2 T^2} + \frac{\cos \omega T}{\omega T} \right) + T_{2n} \left(\frac{4n+1}{2\omega T} \right) \frac{\sin \omega T}{\omega T} \right]. \end{aligned}$$

Here $T_k(x)$ and $V_k(x)$ are first- and second-order Chebyshev polynomials.

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USSR

UDC 621.391.8:519.27

CHIGAR'KOV, G. K., LAPINSKAYA, YE. V.

"Spectrum of orthogonal signals coinciding with respect to shape with Legendre Polynomials"

Tr. Mosk. in-ta radiotekhn., elektron. i avtomatiki (Works of Moscow Institute of Radio Engineering, Electronics and Automation), 1970, vyp. 47, pp 226-230 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A99)

Translation: An analytical formula is obtained for the spectral density of orthogonal signals coinciding with respect to shape with Legendre polynomials. This formula makes it possible to express the spectral density of the signals in terms of tabulated functions. This greatly simplifies the calculations connected with analysis of the complex signal spectrum and the characteristics of the systems where these signals are used.

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USSR

UDC: 548.25

BUYKO, L. D., KALOSHKIN, E. P., KOLESHKO, V. M., and CHIGIR',

G. G.

"Device for Measuring the Alloying Profile of Epitaxial Films"

Moscow, Pribery i tekhnika eksperimenta, No. 4, July-August, 1972,
pp 220-222

Abstract: The function of the device described by this paper is to determine the concentration of impurities in epitaxial films through the use of the barrier capacitance method, which is based on the dependence of the p-n junction capacitance on the impurity concentration. The basic schematic of the device is given. Its principal component is a bridge with transformer arms and a set of standard capacitances. Capabilities of the device were checked by using epitaxial films of the n^+-n and n^+-n-p^+ types, grown on Si of the substrate KES-0.01 by the reduction of $SiCl_4$ with hydrogen. A curve is plotted for the distribution of the impurity concentration in the n^+-n film as a function of the film's thickness, and it is found that points found experimentally through the use of this device fall almost directly on this theoretically plotted curve. Similar graphical results were obtained for the n^+-n-p^+ film.

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USSR

C
UDO 621.385.632:621.385.633

CHIGIREV, V.P., MESHKOV, O.F.

"Nonlinear Theory Of Devices With Persistent Interaction Of The 'O' Type With Periodic Electrostatic Focusing Of An Electron Beam With Finite Values Of The Amplification Parameter"

Nelineynaya teoriya priborov s dlitel'nym vzaimodeystviyem "O" -- tipa s periodicheskoj elektrostatocheskoj fokusirovkoj elektronogo puchka pri konechnykh znacheniyakh parametra usileniya (cf. English above. Editorial Board Of Journal "Radio-engineering And Electronics" AS, USSR), Moscow, 1970, 19 pp, Bib., 6 titles (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract 8A139 DEP)

Translation: The derivation is presented of a system of nonlinear one-dimensional equations for TWT and BWT with periodic electrostatic focusing (PEF) of the electron beam; after the accuracy of the equations derived has been indirectly confirmed, a linearization of these equations is conducted and expressions are obtained which determine the efficiency of TWT and BWT with PEF. In the particular case of an absence of longitudinal static fields in the interaction area, the one-dimensional nonlinear equations obtained for TWT and BWT with PEF develop into corresponding equations for TWT and BWT, with infinitely strong focusing by a magnetic field. Author's summary.

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USSR

UDC 681.325.54.045

GOLIK, S. M., and CHIGIRIN, Yu. T.

"An Accumulating Decimal Adder"

USSR Author's Certificate, No 272671, Filed 4 Nov 68, Published 16 Nov 70
(from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya
Tekhnika, No 8, 1971, Abstract No 8B290 P)

Translation: The proposed device pertains to the field of computer engineering and is intended for adding numbers in decimal code. There is a well-known accumulating decimal adder which contains a converter for transforming phase representation of code into a number of pulses; a pulse-position memory element with OR elements; and a circuit for generating a carry pulse, which contains a) a flip-flop with separate inputs and b) an AND element. However, in this type of adder, mistakes made during the addition of numbers and during carry operations are eliminated by the spacing in time of the pulse train and of the carry pulse, which decreases the speed of the adder. The device suggested here is distinguished by the fact that its circuit for the generation of a carry pulse contains both a flip-flop with a complementing input and an AND element. The complementing input of the flip-flop is connected with the output of the pulse-position memory element. The output of the

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GOLIK, S. M., and CHIGIRIN, Yu. T., USSR Author's Certificate, No 272671, Filed 4 Nov 68, Published 16 Nov 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B290 P)

flip-flop is connected to one of the inputs of the AND element, the other input of which is connected to the interrogation pulses bus. This increases the speed of operation of the adder because the carry pulse occurs at the same moment as the interrogation pulse.

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USSR

UDC 621.382.3

PAVLOV, P. V., VASIL'YEV, V. K., VOLOD'KO, V. G., ZORIN, Ye. I., TETEL'-
BAUM, D. I., TULOVCHIKOV, V. S., CHIGIRINSKAYA, T. Yu.

"Peculiarities of Concentration Profiles in Ion Implantation and Their
Use for Creating Varicaps and Bipolar Transistors"

Kiev, IVUZ, Radioelektronika, Vol 14, No 11, Nov 71, pp 1353-1364

Abstract: The authors consider the principal technically important singularities of concentration profiles in the case of ion-beam alloying both without distillation and after diffusion distillation of dopants. Problems of calculating the principal sections and depths of PN junctions on silicon as a function of conditions of irradiation and annealing are discussed. A description is given of the use of the ion-beam method for making a varicap with an inverse impurity gradient in the base, and also for making a binary PNP transistor. The basic parameters of the varicap are calculated. Nine figures, one table, bibliography of nine titles.

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USSR

UDC 621.385.632.2 (088.8)

LAGRANSKIY, L.K., PAN'KOV, I.A., CHIGIRINSKIY, P.YA.

"M-Type Amplifier"

USSR Author's Certificate No 256094, filed 8 June 68, published 19 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A159P)

Translation: The M-Type crossfield microwave power amplifier with nonsynchronous performance described contains an electron gun, collector, a decelerating system, and a negative electrode. This is for improvement of the uniformity of the amplitude-frequency characteristics, an increase of the stability of the amplitude of the output signal during change of the feed voltages, and for a decrease of the unit thermal load in the elements of the decelerating system. In the direction of movement of the electron flow, the electrode is divided into at least two parts. The parts of the electrodes found under identical potentials are located at different distances from the decelerating system, and those found under different potentials -- at equal distances from the retarding system.

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USSR

C
UDC 621.385.6(088.8)

LAGRANSKIY, L.M., PAN'KOV, I.A., CHIGIRINSKIY, P.Ya.

"M-Type Beam Device"

USSR Author's Certificate No 253940, Filed 25 June 68, Published 3 Mar 70 (from
RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A175P)

Translation: A M-type beam device with a transverse nonuniform magnetic field is proposed which contains an electron gun, an interaction space formed by a decelerating system and a negative electrode, and a collector. With the object of increasing power in the device, a plate of ferromagnetic material is introduced, located outside of the interaction space as viewed from the direction of the negative electrode and parallel to the latter.

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USSR

UDC 541.6:541.12

YANOVA, L. P., BLYSKOSH, G. S., CHIGISHOVA, A. M., TAUBMAN, A. B., CHALYKH, A. Ye., and LUK'YANOVICH, V. M., Institute of Physical Chemistry, USSR Academy of Sciences, Moscow

"Mechanical and Chemical Grafting of Polymers on the Surface of Ionic Crystals"

Moscow, Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 171-172

Abstract: It was previously established by several of the authors that grafting of polymers on a crystal surface is not uniformly distributed, but appears at localized centers. The present study was undertaken to determine the character of this localization.

Vacuum-dried (3 hrs., elevated temperature) rock salt and calcite crystals were submerged in a monomer, then split, to secure a fresh surface. Intensity of electron emission was measured.

Electron microscope photographs confirmed the localization of polymer grafting; length of stay in the monomer had no effect on the progress of grafting. It is concluded that successful grafting is dependent not on the bond strength of the ionic crystal, but rather on the formation of radicals and on the ionization of defects and the rise of free electron emission, appearing at the time of splitting.

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USSR

UDC 66.048.2

LAGIDZE, R. M., CHIGOGIDZE, L. P., IREMADZE, N. K., and CHAVCHANIDZE, D. G., Institute of Physical and Organic Chemistry imeni P. G. Melikishvili, Tbilisi, Academy of Sciences Georgian SSR

"Synthesis and Reactions of Some Substituted Tetrahydroindenoindenes and 2-Phenyl-1,3-dialkylindanes"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 57, No 1, Jan 70, pp 69-72

Abstract: The authors condensed the diacetate of 3,6-dimethyl-4-octene-3,6-diol with cumene, 2,6-dimethyl-3-heptene-2,5-diol with p-xylene and cumene, and 3,6-diethyl-4-octene-3,6-diol with toluene, p-xylene and cumene in presence of $AlCl_3$ yielding 2-phenyl-1,3-dialkylindane and a series of derivatives of tetrahydroindenoindene. Physical properties of all products are reported. Chlorosulphonation of an earlier synthesized spiro-2,3,6,7-dibenzo-4,1',8,1''-dicyclohexylbicyclo(3,3,0)octane 7 gave a series of new sulfonylamides.

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USSR

UDC: 621.315.592

CHIGOGIDZE, Z. N., KHUCHUA, N. P., GUTNIK, L. M., KHARATI, R. G., VARLAMOV, I. V., BEKIREV, U. A., TYUTYUN, A. A.

"Concerning the Mechanism of Failure of Gunn Diodes"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1670-1676

Abstract: Devices based on the Gunn effect operate most effectively at high bias voltages; however, increasing the voltage causes breakdown of the device. At present there is no unanimous opinion on the mechanism of failure and degradation of Gunn diodes. In this paper the authors investigate coplanar Gunn diodes with plane-parallel and annular electrode configurations both with and without a silicon dioxide passivating coating. The diodes were tested in the pulse mode. It is shown that in accordance with previously available experimental data the failure of Gunn diodes takes place as a result of formation of a shorting channel between the contacts of the device. Information is obtained on the dynamics of the visible portion of the breakdown by means of motion picture photography of this process through an optical microscope. It is shown that silicon dioxide passivation of the

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CHIGOGIDZE, Z. N. et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1670-1676

active region has an appreciable effect on the nature of the visible portion of the breakdown and on the ratio of the breakdown voltage to the threshold voltage. A microscopic x-ray analysis is made of the composition of the contact regions and the channel on various stages of thermal breakdown. It is found that a transverse magnetic field affects the position of the shorting channels and the ratio of the breakdown voltage to the shorting voltage. A study is made of Gunn diode emission in the infrared region of the spectrum at voltages close to the breakdown voltage. It is concluded that the cause of failure of Gunn oscillators at high bias voltages is the formation of current strings caused by the development of an S-shaped current-voltage curve due to impact ionization when a strong field domain passes over the specimen. The authors thank M. S. Shur for discussing the results of the paper, and N. N. Mamatsashvili for taking part in the measurements.

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USSR

UDC 632.4.42/.49A/z

CHIGRIN, V. V., BESSMEL'TSEVA, L. M., POLYAKOVA, G. D., and ALESHIN, Ye. P.,
North Caucasus Scientific Research Institute of Phytopathology, Krasnodar

"Enzymatic Activity in Dormant and Germinating Uredospores of *Puccinia graminis f. tritici*"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 591-594

Abstract: Respiratory activity and respiratory rate were determined in moist uredospores of the agent of wheat stem rust after germination for 18 hours. The intensity of oxygen uptake by homogenates and intact spores in the presence of sodium linolate, sodium ascorbate, cytochrome C, phloroglucinol, and gallic, caffeic, and protocatechuic acids, as well as in the presence of sodium azide and sodium diethyldithio-carbamate was measured in dormant uredospores before and 18 hours after the start of germination. Respiration of uredospores sharply increased when they were moistened but decreased after 18 hours' germination to the rate of dormant spores. These changes in respiratory rate indicate that in the course of germination fats are utilized first and then carbohydrates. Copper-containing terminal oxidases play an important part in oxygen uptake by the uredospores, and the activity of these enzymes increases appreciably
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USSR

CHIGRIN, V. V., et al, Sel'skokhozyaystvennaya Biologiya, Vol 5, No 4, 1970, pp 591-594

during germination. The ability of the spores to oxidize caffeic and protocatechuic acids and the large quantity of these acids in the spores suggest that there is an alternative mode of terminal oxidation through the polyphenol-polyphenoloxidase system.

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1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CHANGES IN A SYSTEM OF ENDOGENOUS GROWTH REGULATORS IN BEAN PLANTS
UNDER THE INFLUENCE OF 2,4-D -U-
AUTHOR--(05)-CHIGRIN, V.V., FILINKOLDAKOV, B.V., FADEYEVA, O.I.,
BORTNIKOVA, T.P., SYKALO, N.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 301-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LEGUME CROP, PLANT PHYSIOLOGY, PLANT GROWTH REGULATOR,
HERBICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0021 STEP NO--UR/0394/70/008/004/0301/0302
CIRC ACCESSION NO--AP0137220
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137220

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWENTY FOUR HR AFTER TREATMENT OF KIDNEY BEAN PLANTS WITH A SOLN. OF THE K SALT OF 2,4-D (2 TIMES 10 PRIME NEGATIVE 3 M), THE CONTENT OF INDOLEACETIC ACID (I) IN THE LEAVES WAS UNCHANGED, BUT AFTER 6 DAYS IT WAS DOUBLED. IN THE STEMS OF THE PLANTS THE AMT. OF I DOUBLED, 24 HR AFTER APPLICATION OF THE HERBICIDES. THE ACTIVITY OF I OXIDASE, AND THE CAPACITY OF FIBER HOMOGENATES TO SYNTHESIZE I FROM TRYPTOPHAN, WAS CONSIDERABLY HIGHER FOR PLANTS TREATED WITH 2,4-D. FACILITY: SEVEROKAVKAZ. NAUCH.-ISSLED. INST. FITOPATOL., USSR.

UNCLASSIFIED

USSR

UDC 669.18-147:621.746

RUTES, V. S., Doctor of Technical Sciences, CHIGRINOV, M. G., Candidate of Technical Sciences, ASKOL'DOV, V. I., Candidate of Technical Sciences, BALLEAD, E. R., Engineer, and TKACHEV, P. N., Engineer, Central Scientific-Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Formation and Migration of Non-Metallic Inclusions During Continuous Steel Pouring"

Moscow, Stal', No 10, Oct 70, pp 895-897

Abstract: A high-melting ZrO_2 tracer is introduced into the inwall to clarify the principal sources of admission of non-metallic inclusions during continuous steel pouring -- the inwall of the intermediate ladle, the residue of the furnace slag, and also slag which forms as a result of secondary oxidation of molten metal. An intensive flow of metal into the intermediate ladle, determined by the falling stream, makes flotation of inclusions difficult. These flows can be weakened at a sufficiently high level of metal -- on the order of 600-650 mm -- in the intermediate ladle.

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1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CONTINUOUS CASTING OF 82 TIMES 82 MM TOOL STEEL BILLETS -U-
AUTHOR--(04)-LOBANOV, V.V., GLAZKOV, A.YA., RUTES, V.S., CHIGRINOV, M.G.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(3), 233-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CONTINUOUS CASTING, CAST STEEL, TOOL STEEL, ALLOY ADDITIVE,
ALUMINUM, METAL ROLLING, METAL CRACKING, GRAIN SIZE, METAL POROSITY,
SILICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1286 STEP NO--UR/0133/70/030/003/0233/0235
CIRC ACCESSION NO--AP0136692
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136692

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THESE BILLETS WERE SUCESSFULLY CAST AT 2.3 M PER MIN THROUGH A 10 M NOZZLE FROM 0.7-0.8PERCENT C STEEL WHEN HOLDING TUNDISH TEMP. AT 1510-30DEGREES AND THOSE FROM 1.2-1.3PERCENT C STEEL WHEN THIS TEMP. WAS 1490-1510DEGREES. CLOGGING OF THE NOZZLE WITH NONMETALLICS WAS PREVENTED BY SUBSTITUTING AL IN THE LADLE WITH 1 KG CA SILICIDE PER TON. POROSITY AND GRAIN SIZE WERE CONTROLLED BY ADDING 0.3 KG AL WIRE PER TON TO THE MOLD, WHICH DID NOT CONTAMINATE BILLET SURFACE. EXCESSIVE PRESSURE OF 17.5 TONS PRODUCED BY THE PINCH ROLLS CAUSED CRACKING AND SEGREGATION IN BILLETS, WHICH WERE ELIMINATED BY REDUCING THIS PRESSURE TO 1.5 TONS. SURFACE FOLDS 0.5-2 MM DEEP CAUSED BY MOLD OSCILLATION WERE FULLY ELIMINATED BY SCALING IN SUBSEQUENT HEATING.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ARTIFACTS IN MEASUREMENTS OF THE FARADAY EFFECT -U-
AUTHOR--(02)-CHIKALOVADUZINA, O.P., SHARONOV, YU.A.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(2), 419-20
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DNA, ABSORPTION SPECTRUM, FARADAY EFFECT, UV SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0241 STEP NO--UR/0051/70/028/002/0419/0420
CIRC ACCESSION NO--AP0119237
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119237

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

ABSTRACT. DIFFERENCES BETWEEN THE THEORETICAL AND EXPTL. DATA OF MAGNETIC ROTATORY DISPERSION OF NATIVE AND DENATURATED DNA AT THE 260 M MU ABSORPTION BAND WAS FOUND. DNA POSSESSED INSUFFICIENT SYMMETRY TO OBSERVE THE DISPERSION OF TYPE A. THE ROTATORY VALUE AT 260 M MU INCREASED NONLINEARLY DURING A CHANGE OF ABSORBANCE OF THE SOLN. UP TO 0.5 AND THEN IT REMAINED CONST. THIS MAX. VALUE WAS PROPORTIONAL TO A MAGNETIC FIELD INTENSITY AND DECREASED WITH INCREASING WAVELENGTH. AT WAVELENGTHS LOWER AND HIGHER THAN 260 M MU, A LINEAR DEPENDENCE OF DIFFERENT SIGN WAS OBSD. AT HIGHER ABSORBANCE; IN THE CASE OF DNA, A SMALL TYPE B EFFECT PARTICIPATED. SIMILAR ARTIFACTS WERE OBSD. IN THE CASE OF GUANOSINE, THYMIDINE, AND BA SALT OF CYTIDYLIC ACID. ACETONE AND METHYL ETHYL KETONE SHOWED NO EFFECT, ACETOPHENONE, A SMALL TYPE B EFFECT. THESE ARTIFACTS ARISING DURING THE MEASUREMENT IN THE ABSORPTION REGION WERE EXPLAINED BY REPEATED REFLECTIONS FROM CUVETTE WALLS BY LIGHT DISPERSION. AT LOW TRANSPARENCY, THE EFFECT CAUSED BY A SOLVENT WAS GIVEN BY A MAIN COMPONENT ONLY, WHICH EXPLAINED THE "SATN." AT HIGH ABSORBANCE. THESE ARTIFACTS WERE IMPORTANT IN MEASUREMENTS IN THE UV SPECTRAL REGION.

UNCLASSIFIED

USSR

CHIKER, N. P., et al (Editors)

Sportsmen-Podvodnik, Vyp 29 (Underwater Athlete-Issue 29), Moscow, DOSAAF, 1972, 72 pp

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UDC 531.781(088.8)

TURBAL, V. K., PETROV, V. G., VIDEMAN, A. P., IVANOV, V. M., CHIKER, YU. N.

"Elastic Sensing Element"

USSR Author's Certificate No 216992, filed 7 Oct 66, published 19 Aug 69
(from RZH-Metrologiya i Izmeritel'naya Tekhnika, No 1, Jan 70, Abstract
1.32.315 P)

Translation: The proposed elastic sensing element of frame type consists of a base and moving part which senses measured loads and is coupled with the base by spring hinges. For simultaneous individual measuring of the moment and force, which act in one plane -- for example on the vane of a propeller -- it is equipped with a second moving element coupled with the first moving element by a spring hinge and two sensing elements in the form of bent flat springs which prevent longitudinal strain and interact with the moving sensing elements.

USSR

UDC 533.9

TSYTOVICH, V. N., and CHIKHACHEV, A. S.

"On the Structure of Exponential Spectra of Relativistic Electrons in a Turbulent Plasma"

Moscow, Fizika Plazmy -- Sbornik Statey Moskovskogo Inzhenerno-Fizicheskogo Instituta, No 3, 1971, pp 97-103

Abstract: In previous articles the authors considered the problem of the acceleration of relativistic electrons in a turbulent plasma during their interaction with electromagnetic radiation. It was shown that the solution of the self-consistent problem for waves and electrons gives an exponential energy spectrum $\sim 1/\xi^\gamma$ for electrons with the exponent γ , which is a function of the ratio \mathcal{K} of the plasma energy density W to the plasma particle energy density, $\mathcal{K} = W/n_0 mc^2$, and the ratio ξ of the gyrofrequency $\omega^{(0)} = eH/mc$ to the plasma frequency $\omega_{pe} = \sqrt{4\pi ne^2/mc}$. $\xi = eH/mc\omega_{pe}$. These spectra

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TSYTOVICH, V. N., and CHIKHACHEV, A. S., *Fizika Plazmy* -- Sbornik Statey Moskovskogo Inzhenerno-Fizicheskogo Instituta, No 3, 1971, pp 97-103

are generated only up to those maximum energies whose values are determined from radiation cutoff conditions.

The acceleration of relativistic electrons is due to the action of magnetic braking and plasma mechanisms. The relation between particle energy and frequency is different for these two mechanisms. It is known that inflection points are observed in most spectra of radiation sources. They can be explained by changes resulting from energy losses due to the radiation of relativistic electrons in the propagation of electrons from a generation source. From considerations concerning the two acceleration mechanisms, it follows that there is also another possibility, involving the fact that during particle acceleration inside the sources the above-indicated inflection points are formed in the spectra of the accelerated particles, and spectra of this kind are injected in the space outside the sources. The present article is devoted to an analysis of this question. It is shown that the particle spectra most

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TSYTOVICH, V. N., and CHIKHACHEV, A. S., Fizika Plazmy -- Sbornik Statey Moskovskogo Inzhenerno-Fizicheskogo Instituta, No 3, 1971, pp 97-103

often are not exponential but are close to exponential. This corresponds to observed results. In view of this, great interest attaches to the numerical solution of the spectra problem without the use of strong inequalities, which the authors are forced to use in the present article.

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTRUM OF RELATIVISTIC PARTICLES ACCELERATED BY PLASMA TURBULENCE
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ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ANALYSIS OF THE RELATIVISTIC ELECTRON SPECTRA OF COSMIC RAYS ACCELERATED BY PLASMA TURBULENCE. THE EXPONENTIAL PROPERTY OF THESE SPECTRA IS DISCUSSED. THE NATURE OF A SINGULARITY CONTAINED IN A SOLUTION TO AN EQUATION DESCRIBING THE BEHAVIOR OF THESE SPECTRA IS EXAMINED.

FACILITY: AKADEMIIA NAUK

SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

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UDC [537.226+537.311.33]:[537.535]

GEORGOBIANI, A. N., LAVROV, A. V., TODUA, P. A., ~~CHIKHACHEVA, V. A.~~

"Characteristics of the Electroluminescence of Homogeneous Zinc Sulfide Single Crystals Caused by Acoustoelectric Instability"

Kratkiye soobshch. po fiz. (Brief Communications in Physics), 1971, No. 6, pp 31-34 (from RZh Fizika, No 12, Dec 71, Abstract No 12Ye14 6)

Translation: A study of the electroluminescence in ZnS:I crystals which occurs upon the rise of acoustoelectric instability is described. The relaxation time of the electroluminescence ≤ 2 μ sec, which is 2-3 orders less than the corresponding times for luminophors based on ZnS. The electroluminescence spectrum and the dependence of brightness on the applied field were measured. V. A. Chapnin.

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USSR

PAISOV, I. V., AVRAAMOV, YU. S., LOKSHINA, L. I., EL'KHONES, N. M., and CHIKHLADZE, K. V., Moscow Institute of Steel and Alloys

"Influence of Germanium on the Structure and Properties of Steel" Moscow, IVUZ Chernaya Metallurgiya, No 3, 1971, pp 126-128.

Abstract: Steel with moderate and low carbon contents was produced in an induction furnace. The chemical compositions of the steels studied were, %:

C	Si	Ge	Mn	S	P
0.44	1.01	-	0.69	0.023	0.0096
0.44	-	1.00	0.60	0.017	0.0067
0.09	3.18	-	0.35	0.026	0.0084
0.057	-	3.18	0.73	0.026	0.0063
0.09	2.39	-	0.30	0.027	0.0054
0.067	-	2.24	0.84	0.027	0.0063

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PAISOV, I. V., et al., IVUZ Chernaya Metallurgiya, No 3, 1971,
pp 126-128

The steel alloyed with germanium has lower strength but much higher ductility than silicon steel. The sharp increase in ductility of this steel after annealing may be found very valuable in the production of thin sheet transformer and dynamo steel.

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PAISOV, I. V., AVRAAMOV, YU. S., LOKSHINA, L. I., EL'KHONES, N. M., and CHIKHLADZE, K. V., Moscow Institute of Steel and Alloys

"Influence of Germanium on the Structure and Properties of Steel"

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