USSR

KARTSEV, I. D., and POLIYEVSKIY, S. A., Institute of Hygiene of Children and Adolescents of the Ministry of Health USSR, Order of Lenin State Central Institute of Physical Education

"Grouping of Professions for Applied Physical Training"

Moscow, Teoriya i Praktika Fizcheskoy Kultury, No 6, 1972, pp 36-39

Abstract: Due to their great variety, professions should be grouped according to identity and similarity of tasks required by each profession. This is necessary for the development of common physical training methods and for an early suitability determination of a given individual to a chosen progession. The suggested method is based on the establishment of physiological suitability criteria for different professions. The criteria are determined by correlation between the physical potential of the human organism and the profession requirements. The author analyzed several professions at a watch plant and pointed out the common traits among them. Using his own data and that of other authors, he grouped 360 professions into five groups according to their professional suitability criteria. These groups are: (1) Professions dealing with an assembly of units consisting of small parts, and the shoe and sewing industry professions. This group

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KARTSEV, I. D., and POLIYEVSKIY, S. A., Teoriya i Praktika Fizicheskoy Kultury, No 6, 1972, pp 36-39

includes 96 professions. (2) Professions which are characterized by sudden and unexpected complications which require immediate decision-making. An incorrect decision to remove the complex situation could mean loss of life of injury. To this group belong 210 professions, such as professions dealing with chemical reactors and reactions, cold and hot metal rolling mills, production of ceramic heat-resistant materials, and other. (3) Programmers and computing personnel at computing centers and at many plants and factories. (4) Setup men at plants and factories (turret lathe, milling, grinding, and other metal-working machines). The total number of professions in this group is 38. (5) Tractor and machinists group (20 professions). The training by means of physical culture and sports of functions that are included in the suitability criteria should determine the content of occupational suitability preparation for complex professions and their groups.

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KARTSEV, I. D.

Health

PHYSIOLOGICAL AND HYGIENIC ASPECT OF WORK TRAINING AND VOCATIONAL GUIDANCE

UDC: 612+613]:37.035.3

[Article by I. D. Kartsev, S.A. Kozlov, Institute of Child and Adolescent Hygiene, USSR Ministry of Health, Institute of Child and Adolescent Physiology, USSR Academy of Pedagogic Sciences, Moscow; Voprosy Akademii Meditsinskikh Nauk, Russian, No 4, 1972, pp 87-96]

The rational use of society's manpower is an important prerequisite for implementing the decrees of the 23rd and 24th congresses of the CPSU pertaining to the increase in effectiveness of national production and productivity of labor. In a period of intensive building of communism, increasing demands are being made of the work force and its professional training. It is now time to train workers whose development and level of technical knowledge would come closer to the level of technical engineering workers, and they should be proficient in modern technology.

The complexity of modern occupations is rather great and is showing a tendency to increase. For this reason, the choice of occupation by an adolescent that would meet both his and society's demands, is an extremely difficult and sometimes responsible matter.

The Constitution of the Soviet Union proclaims the right to work, which implies not only employment but also free scientifically substantiated choice of occupation which should satisfy the wishes, demands, and capabilities of the adolescent as well as the demands of society. Only scientifically substantiated choice of profession will provide for joyful work that will not only help in preserving health but also in development. Without this, work cannot be a human need. Without scientifically substantiated choice of occupation, proper placement of personnel is unthinkable. In our times, the scientific and technological revolution is proceeding at a pace having no equal in history, but this pace is quickening more and more. Technological progress involves all aspects of labor. The choice of a profession in our country is not set against the adolescent's desire to receive higher and secondary specialized education; it is viewed as the start of a career and future, more deliberate choice of specialty by the adolescent, which equally requires scientific substantiation.

USSR UDC: 681.327.02

KARTSEV, M. A.

"A Device for Control of an Operative Memory"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 297070, Division G, filed 31 Jul 69, published 2 Mar 71, p 162

Translation: This Author's Certificate introduces a device for control of an operative memory made in the form of n memory modules. The device contains an address register divided into most and least significant sections, and a decoder of access-enable signals. The input of the decoder is connected to the least significant section of the address register, and the decoder outputs are connected to the control inputs of the corresponding modules of the operative memory. As a distinguishing feature of the patent, the device is designed to provide for the possibility of simultaneously sampling from 1 to n cells by sequential addresses, beginning with an address given in the command. To this end, the device contains address assemblies, an address assembly control signal decoder, and an address code converter. The converter input is connected to the output of the most significant section of the address register, and the converter output is connected to some of the inputs of the address assemblies. The second inputs of the address

KARTSEV, M. A., USSR Author's Certificate No 297070

assemblies are connected to the output of the most significant section of the address register, and the controlling inputs of the address assemblies are connected to the corresponding outputs of the address assembly control signal decoder. The decoder input is connected to the output of the least significant section of the address register. Between the information inputs and the recording inputs of the operative memory modules, and between the read outputs of the operative memory modules and the information outputs are ring shifters, and the access-enable signal decoder has additional inputs connected to the control unit.

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USSR UDC 536.242

KARTSEV V. A., and SVIKLIS, B. B., Institute of Physics, Academy of Sciences Latvian SSR

"Influence of Magnetic Field on Heat Exchange of an Anomalously Viscous Fluid"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 5, 1970, pp 74-79

Abstract: The article considers heat exchange in the plane-laminar magnetohydrodynamic flow of an anomalously viscous fluid in a channel with nonconducting walls. A solution is obtained for the energy equation for fully developed flow when the channel operates under a short-circuit mode ($\phi = 0$) and a no-load mode ($\phi = 1$). An analysis is given of the dependence of the Nusselt number Nu on the generalized Hartmann number M for the magnetohydrodynamic flow of a non-Newtonian exponential fluid at various values of the rheological parameter n and the head load k on the channel with and without allowance for anomalously viscous and joulean dissipation. Functions are given which show

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KARTSEV, V. A., and SVIKLIS, B. B., Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 5, 1970, pp 74-79

that an increase in the number M significantly influences heat transfer, especially at $\Phi = 1$. The greater the rheological parameter n and the weaker the heat flux k on the walls, the more intensive is the change in the absolute value of Nu. An increase in the non-Newtonian parameter n and a decrease in the heat load on the channel walls result in a decrease in the value of M at which $Nu \rightarrow \pm \infty$, with the value less at $\Phi = 0$ than at $\Phi = 1$. The analysis indicates that in dilatant fluids intensive heat exchange takes place at low values of the generalized Hartmann number.

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KARTSEV, V. I.

SO: JPRS 54386
03 NOV 71

UDC 612.843.364.014.44

EFFECT OF HIGH BRIGHTNESSES ON THE RATE OF EYE ADAPTATION TO DARKNESS

(Article by V. I. Kartsev, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 4, pp 47-49, 1971, submitted for publication 4 August 1970)

Abstract: The rate of adaptation of central vision of both eyes to the darkness after light exposures of various durations (1.5, 3, 6 minutes) after illumination (20,000 to 80,000 lux) was studied in four test subjects in the age group 18-30. A white barium screen illuminated by direct sunlight was used as a light source. During adaptation to the darkness the central vision response time was proportional to the quantity of illumination during disadaptation. A value of approximately $8 \cdot 10^6$ lux·sec was used. Central vision response remained virtually unchanged with a further stimulus increase.

The problem of the effect of great brightnesses on performance of the visual analyzer has been attracting ever-greater attention from researchers during recent years. In particular, this can be attributed to the rapid development of all types of transportation, space navigation, different types of light signaling, etc.

One of the important conditions ensuring ocular performance is adaptation and readaptation to a definite light level. A number of investigations have been devoted to this problem (I. M. Dantsig; D. A. Zil'ber, 1937 and Baumgardt and Smith; Kietzmann; Payne; Bosse, et al.; Hill and Chisum; However, an evaluation of the collected data is prevented by the great variety of methodological procedures and research methods.

The purpose of our study was an investigation of the process of restoring the sensitivity of the light-perceiving apparatus of both eyes after exposure to a light stimulus with a high level of illumination (from 20,000 to 80,000 lux) and different durations but falling in a range ensuring the performance necessary under the particular conditions. It is within the

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UDC 51

KARTSEV, V. S., MAYZLIN, I. YE., OSOKIN, V. V.

"Compiling the Optimal Steel Output Schedule in an Open-Hearth Shop"

V sb. Mat. vopr. upr. proiz-vom (Mathematical Problems of Production Control--collection of works), Moscow, vyp. 3, 1971, pp 87-99 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V403)

No abstract

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USSR UDC 51

MAYZLIN, I. YE., OSOKIN, V. V., KARTSEV, V. S.

"Optimal Planning of Multinomenclature Production"

V sb. Mat. vopr. upr. proiz-vom (Mathematical Problems of Production Control--collection of works), Moscow, vyp. 3, 1971, pp 4-14 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V398)

No abstract

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USSR UDC 621.385.832.032.269.1.002.237

KARTSEV, YE.A., SKACHKO, YU.V.

"Improvement Of The Quality Of Electronoptical Systems By An Increase Of The Precision Of Control Of The Geometrical Dimensions Of Parts And Units Of The Optical System"

V sb. Tochnost' radioelektron.apparatury. Sb. 2 (Precision Of Radioelectronics Apparatus. Collection 2), Moscow, 1971, pp 60-66 (from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1A269)

Translation: A device for control of the cathode-modulator interval is described, in which the contact method is used as well as a conversion of the movement of the measuring feeler [shchup] into a change of the frequency of pulsations of the oscillations of two string selfoscillators. The measuring forces prove to be entirely permissible and do not exceed (0.01--0.02) newton. The error of measurement of the cathode-modulator interval does not exceed plus or minus 2 micrometer. The results of the measurements are issued by the device in numerical form, which makes it possible to conduct automatic or semiautomatic grading with an output up to 3000 units per hour. 5 ill. M.V.

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USSR UDC 612.826.4:612.144

GUREVICH, M. I. and KARTSEVA, A. G.

"Effect of Electrostimulation of the Human Amygdaloid Compex on Hemodynamics"

Kiev, Fiziologichniy Zhurnal, No 5, 1973, pp 637-641

Translation of abstract: The authors studied the hemodynamic changes (cardiac output and heart rate) occurring in epileptics after electrostimulation of the mediobasal nuclei of the amygdaloid complex through implanted electrodes; the values were recorded by the rheocardiographic and electrocardiographic methods. The hemodynamic changes were shown to vary with the location of the electrodes (depth to which they were inserted in the structure under study). Frequent, repeated stimulation and increased intensity of stimulation affected the hemodynamic reactions recorded. Analysis of the results suggests definite specificity and capacity for differentiation on the part of some nuclei of the human amygdaloid complex.

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KARTSOVNIK, M.Z.

IPRS 59063
4-73

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Z-2. MACHINE SIMULATION OF GROWTH AND ALLOYING PROCESSES

[Article by A. Ye. Kiv, M. Z. Kartsovnik, Krivoy Rog, Tashkentt Novosibirsk, III Simpozium po Problemam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 177]

The relaxation of the atoms in the boundary layer during layered growth of foreign atoms on the substrate is traced. For this purpose, the equilibrium equations are solved on the Minsk-22 computer an applied to some of the simplest grown structures. Qualitative information was obtained on the effect of the pinholes on the thickness and configuration of the transient layer. Known conditions of heteroepitaxy are generalized.

The diffusion equations are solved considering the displaced boundary to obtain impurity concentration profiles in the substrate and the film. The processes of interaction of the impurities and complex formation are introduced into the investigation. The solutions were obtained on the Minsk-22 computer and also on an electric simulator.

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MATHEMATICAL PLANNING DURING THE EPOXIDATION OF UNSATURATED COMPOUNDS USING UREA PEROXIDE TO OBTAIN THE MAXIMUM EPOXY NUMBER -U-

AUTHOR-(05)-MALINOVSKIY, M.S., DUBROV, YU.I., VEDENOV, G.N., KARTSYNEL, M.B., SKRODSKAYA, T.S.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 29-31

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--UREA DERIVATIVE, PEROXIDE, PHTHALIC ANHYDRIDE, ETHANOL, EPOXIDE, VEGETABLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/B08 STEP NO--UR/0303/70/000/002/0029/0031

CIRC ACCESSION NO--AP0140903

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REGRESSIVE EQUATION THAT OFFERED A MEANS FOR DETG. THE OPTIMUM EPOXIDN. CONDITIONS OF VEGETABLE OILS WAS DERIVED. OPTIMUM AMTS. OF UREA PEROXIDE, PHTHALIC ANHYDRIDE, AND ETOH PER DOUBLE BOND WERE 1.273, 1.213, AND 0.347 MOLES RESP.

UNCLASSIFIED

USSR

UDC 77

GOROKHOVSKIY, V. M., LEVIN, YA. A., SOTNIKOVA, I. P., RAKOVA, N. F., KARUNINA, V. V., GALIMOVA, A. M.

"Certain Photographic and Physicochemical Properties of 2- and 5-n-alkyl Homologs of 4-oxo-6-methyl-1,2,4-triazole-(2,3a)-pyrimidine"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 24-29 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1340)

Translation: Photographic and physicochemical properties of 2- and 5-n-alkyl derivatives of sta-salt with substitutes before C_7H_{15} in the second position and before C_9H_{19} in the fifth position. All these substances effectively stopped aging of the emulsion; their stabilizing activity decreased with concentration and there was also observed a greater dilution for a longer alkyl radical. The action of these substances on the emulsion at the time of introduction varied: an increase and a lowering of sensitivity or fogging were encountered, but with an increase in the length of the substitute the predominant effect became desensitization in combination with defogging, a property absent in sta-salt. A

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study of the adsorption of sta-salt homologs on the Hg electrode by the oscillographic polarography method showed that as distinct from sta-salt, which does not have oxidation-reduction peaks and capacity jumps in the region limited by the anode wave of Hg-oxidation and reduction of the background homologs of sta-salt give desorption peaks in this region, the height of which rises with an increase in the length of the substitute and correlates well with their desensitizing effect. This correlation indicates that the deactivization of the sensitivity centers is greater as substances are adsorbed more intensively. A determination of acid dissociation constants of sta-salt homologs and the solubility products of their Ag-salts showed that both quantities drop with an increase in the length of the substitute and the latter must also lead to progressive desensitization. 16 references. Authors abstract.

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USSR

KARTUSHINA, L. I., ROZHKOVA, A. M., DAVRONOVA, A. M., SAMSONOVA, Z. F., and YAKUBOVA, M. YA., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases, and Bacteriological Department, Children's Railroad Hospital No 3, Tashkent

"A Placenta and Yeast Hydrolysate as the Basis for a Nutrient Medium for Growing Pathogenic Microbes"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Abstract: Numerous substitutes for nutrient materials also include placental fluid hydrolyzed with yeast. In this investigation, we determined the feasibility of using placental tissue as nutrient material, by hydrolyzing it with brewer's yeast. A mixture of 1 kg of ground placenta 2 l of brewer's yeast, and 2 l of tap water was kept at 50° C for 6 days, with periodic stirring. Then, the supernatant fluid was decanted. This placenta and yeast hydrolysate, with a high amine nitrogen (400-420 mg%) and peptone (2.3-2.5%) content, was inactivated at 80° C. To prepare nutrient media, the hydrolysate was appropriately diluted, the pH was adjusted, and wither salt or glucose was added. Control media were made from the 1/2

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KARTUSHINA, L. I., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Khottinger's broth. Various strains of Shigella, Salmonella, Escherichia, and Staphylococcus were cultured in sugar media, totaling 225 cultures. In 24 hours, the yields from the experimental and control cultures were equal. Salt media were used as elective nutrients to isolate Staphylococci from feces and vomitus of patients with acute gastronintestinal disorders. Sixty-five parallel tests were carried out. In 24 cases, the Staphylococci were simultaneously isolated from the experimental and the control cultures. This indicates that salt-containing nutrient media made from a placenta and yeast broth have elective properties matching those of media made from the Khottinger's broth.

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USSR UDC 621.762

BELOV, S. V., Candidate of Technical Sciences, Docent, KARTUYESOV, O. C., Engineer, POLYAYEV, V. M., Candidate of Technical Sciences, Docent

"Concerning the Limit of Applicability of the Law of Laminar Filtration in Porous Metals"

Moscow, Izvestiya Vysshkikh Uchhebnykh Zavedeniy — Mashinostroyeniye, No 2, 1971, pp 79-83

Abstract: The article deals with the question of the upper limit of applicability of the law of laminar filtration in porous metals made of spherical particles (bronze, molybdinum, tungsten, copper, iron) and of arbitrarily shaped particles (nichrome, iron). Comparison of the experimental data with the works of other authors made it possible to established that infraction of the law of laminar filtration depends upon the Reynolds number of the flow in the pores, the state of the particle surface, and the degree of change of the pore cross section with respect to the direction of filtration. An empirical relationship is obtained for taking into account the influence of the pore dimensions upon the critical Reynolds number in porous materials consisting of spherical particles. Data are presented concerning the critical Reynolds numbers of porous materials made of spherical and rounded particles. One figure, 1 table, 15 bibliographic entries.
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USSR

UDC:

AKOPOVA, A. B., KARTUZHANSKIY, A. L., MAGRADZE, N. V., and MELKUMYAN, L. V.

"Some Changes in the Parameters of the Paths of Particles in Nuclear Emulsions Under the Effect of a Pulsed Electric Field"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR: Fizika, Vol 6, No 6, 1971, pp 508-511

Abstract: Using the Pu^{239} alpha-particle track regression example (5.15 Mev energy) in BR-type, 200μ nuclear emulsion layers, the authors attempt to show and evaluate information distortion. Multiple field pulses with an intensity of (E) $1.5\text{-}6.0\cdot10^4$ v/cm (where the values of E are given with the dielectric properties of the emulsion layer considered) are fed onto the emulsion layer. Individual pulse duration is 3.5 msec at a frequency of 200 pulses/min. The results show a progressive decrease in the length of particle tracks as E increases at a constant number of pulses or as the number of pulses increases at a constant E. Significant changes in the angular distribution of tracks in the emulsion were observed under the effect of a pulsed electric field. The changes were of the type where the particles tended to orient along the field without regard to their initial direction. Bar graphs are given which show an increase in the dip angle of the tracks which is analogous to the shortening

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USSR

AKOPOVA, A. B., et al., Izvestiya Akademii Nauk Armyanskoy SSR: Fizika, Vol 6, No 6, 1971, pp 508-511

of their length. A similar effect in the distortion of track parameters was also observed by the authors in Ya- and N-1-type emulsion layers. The most probable explanation for the physical observation could be the effect of the pulsed electric field on the gel which changes its physico-mechanical characteristics. Original article: two figures, one table, and seven bibliographic entires.

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USSR UDC 77

KARTUZHANSKIY, A. L., YURCHENKO, A. F.

"Certain New Data on the Kinetics and Natural Aging Mechanism of Photoemulsion Layers"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 134-139 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1338)

Translation: The results of a comparative study of the aging of the same photoemulsion layers with respect to the action of various types of exposure radiation (light, α- and β-particles) and also the dependence of aging kinetics under these conditions on emulsion and extra-emulsion factors are discussed. The basic conclusions of the discussion are two new hypotheses concerning the natural aging mechanism: (1) during aging there can occur a previously unknown process (the authors have called it "redistribution aging") of the partial migration of sensitivity centers from the surface into the depth of the crystals, ordinarily not having a considerable effect on the change in light sensitivity under storage of

USSR

KARTUZHANSKIY, A. L., YURCHENKO, A. F., Uspekhi nauchn. fotogr., 1970, Vol. 14,

pp 134-139

the photographic materials but playing an important role in the change of sensitivity to nuclear particles; (2) during the course of aging there occur processes not only associated with the change in the dimensions of sensitivity centers (growth, dissipation, redistribution), but also touching only the conditions for the functioning of these centers (lowering their potential barrier with adsorbed molecules, producing competing electron showers, etc.). Differences exist between the two groups of processes with the aid of which they submit to division in practice: the first are always irreversible, while the second are as a rule reversible; the kinetics of the first always correlate with the regression kinetics under the same conditions, since the rate of aging is less than the rate of regression, while for the second, this relationship for the velocities (sometimes the kinetics correlation) is not necessary. 12 references. Authors abstract.

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UDC 77

USSR

KARTUZHANSKIY, A. L., TROFIMOVA, L. G., YURCHENKO, A. F.

"Secondary Processes in the Aging of Photographic Layers"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 171-184 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1325)

Translation: The results of experiments to isolate and identify the separate processes occurring in photographic layers under storage and complicating the elementary picture of aging as the growth of all sensitivity centers under normal aging and the dissipation of all sensitivity centers in anomalous aging are considered. The process caused by the change in the size of the sensitivity centers (the growth of deep centers due to surface centers) and essential in those cases of exposure when the participation of deep sensitivity centers is considerable (the action of brief exposure and of ionizing particles) is explained.

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USSR

KARTUZHANSKIY, A. L., et al, Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti, no place of publication given, Vneshtorgizdat, no year given, pp 171-184

Also explained is the existence of processes not associated with a change in the dimensions of the sensitivity centers but with conditions for their functioning. Among these is the effect of moisture, the adsorption of which not only lowers the height of the potential barrier of the sensitivity centers but also affects deep sensitivity centers (without contacting them) by changing their equilibrium with surface sensitivity centers. Included in this group of processes is the effect of an optical sensitizer, which in the initial form has p-type acceptor properties and does not compete with surface sensitivity centers but forms a complex with O_2 in the course of aging, taking on electron-acceptor properties and competing with surface sensitivity centers the more a part of it goes into the complex. 12 references. A. L. Kartuzhanskiy.

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--RECORDING OF TRACKS OF IONIZING PARTICLES ON CELLULOSE FILMS IN VARIOUS GASEOUS MEDIA -U-

AUTHOR-(04)-PRIVALOVA, V.E., KARTUZHANSKIY, A.L., SOROKIN, YE.S., FEDYUKIN, V.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. NAUCH. PRIKL. FOTOGR. KINEMATOGR. 1970, 15(1), 59-61

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--RECORDING EQUIPMENT, ION EMISSION, PARTICLE TRACK PHOTOGRAPHY, PHOTOGRAPHIC FILM, CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/0309 STEP NO--UR/0077/70/015/001/0059/0061

CIRC ACCESSION NO--AP0053294

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201220012-9"

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRACKS OF PRIME210 PO ALPHA PARTICLES (ENERGY 5 MEV) WERE RECORDED ON NITROCELLULOSE (I) AND CELLULOSE ACETATE (II) FILMS EXPOSED TO O, CO SUB2, OR H SUB2 O .1PORS. I FILMS WERE ETCHED WITH A 20PERCENT NAOH SOLN., WHEREAS II FILMS WERE ETCHED WITH A NAOH-KOH-KMNO SUB4 MIXT. AT 50DEGREES. MEASUREMENT RESULTS INDICATED THAT WIDEST TRACKS WERE OBTAINED IN O, I.E., O INITIATED INTENSIVE DEGRADATION OF I AND II FILMS, EVEN AT A PARTIAL PRESSURE OF ONLY TWICE THAT FOUND IN AIR. THE TRACKS WERE MARKEDLY SMALLER IN VACUO.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DEPENDENCE OF THE TEMPERATURE QUENCHING OF THE LUMINESCENCE OF PHOTOEMULSION LAYERS ON EXCITATION DENSITY, AND ITS CONNECTION WITH THE

AUTHOR-(04)-BELOUS, V.M., KARTUZHANSKIY, A.L., MATVIENKO, V.I., SHUR, L.I.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 311-16

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--LUMINESCENCE QUENCHING, SILVER COMPOUND, NUCLEAR EMULSION, ELECTRON CAPTURE, PHOTOSENSITIVITY, LOW TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1469 STEP NO--UR/0051/70/028/002/0311/0316

CIRC ACCESSION NO--AP0118458

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118458

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. QUENCHING OF THE GREEN LUMINESCENCE OF A NO. OF NUCLEAR EMULSIONS WAS STUDIED. WITH DECREASING EXCITATION D., THE QUENCHING REGION IS SHIFTED TO LOWER TEMPS. AT A FIXED TEMP., AN INVERSE PROPORTIONALITY BETWEEN THE LUMINESCENCE INTENSITY AND IONIC COND. OF THE EMULSION MICROCRYSTALS EXISTS. THE ACTIVATION ENERGY FOR THE LUMINESCENCE QUENCHING IS 0.12 PLUS OR MINUS 0.02 EV. THE IONIC MECHANISM OF LUMINESCENCE QUENCHING OF THE AG(BR, I) PHOTOEMULSION MICROCRYSTALS WAS CONFIRMED. THE CAPTURE CENTERS FORMED IN THE PRESENCE OF L,PHENYL,5,MERCAPTOTETRAZOLE (I), ARE NOT VACANCIES; THEY ARE PROBABLY CONNECTED WITH A I-AG PRIME POSITIVE COMPLEX AND WORK AS ELECTRON TRAPS. TEMP. DEPENDENCE OF THE SENSITIVITY OF THE SAME PHOTOEMULSIONS TO THE ALPHA AND BETA PARTICLES WAS MEASURED. AT SMALLER THAN 77DEGREESK, A PECULAIR INVERSION TAKES PLACE; THE SENSITIVITY TO THE WEAKLY IONIZING PARTICLES IS GREATER THAN THE SENSITIVITY TO THE STRONGLY IONIZING PARTICLES WHILE AT NORMAL TEMPS. THIS RELATIONSHIP IS JUST THE OPPOSITE. IN THE PRESENCE OF I, ADDNL. SHALLOW LEVELS OF THE ELECTRON CAPTURE OCCUR. DURING A SUBSEQUENT HEATING OF THE EMULSION BEFORE DEVELOPING, ELECTRONS CAN FREE THEMSELVES THERMALLY FROM THESE LEVELS AND CAN PASS NOT ONLY TO THE RADIATION RECOMBINATION LEVELS BUT ALSO TO DEEPER LEVELS WHICH DET. THE PHOTOGRAPHIC SENSITIVITY.

UNCLASSIFIED

USSR

KARTVELISHVILI, N. A.

"An Energetic System as a Complex Dynamic System and as an Object of Control"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967 [Selected Works of All-Union Inter-University Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 65-67 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V221, by the author).

Translation: Power systems are subjected to mathematical description in the probability theory aspect. However, the ordinary idealization which looks upon a power system as a system with concentrated constants makes this description difficult and complex. A significant abbreviation and simplification of the necessary information can be provided by a transition to the continual idealization of a power system. At the present time, this approach has been developed for problems of dynamics (transient processes, stability), but it is also possible in principle for problems of economics (economically optimal modes, etc.). If a probabilistic criterion of optimality of regulation of the equipment in a power system is selected, the selection of parameters of regulators to assure fulfillment of this criterion (including

USSR

Kartvelishvili, N. A., Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967, Moscow, Nauka Press, 1973, pp 65-67.

adaptive systems) is reduced (by the transition to the continual idealization and the use of the Bubnov-Galerkin method) to solution of a system of algebraic equations.

USSR

UDC 621.787.621.9048.6:669.2/.8

KARTYSHEV, B. N., Candidate of Technical Sciences, and PIROGOV, YE. V. and KHOPOSHEV, I. A., Engineers

"Effectiveness of the Hardening of Alloys AK-6 and V-93 by Vibration Treatment in an Abrasive Medium"

Moscow, Vestnik Mashinostroyeniya, No 11, Dec 73, pp 71-72

Abstract: Results are presented of an investigation of the hardening of alloys AK-6 and V-93 by vibration treatment in a medium of abrasive granules. The experimental procedure is described. The conclusion is drawn that such hardening is entirely feasible and highly beneficial. On the basis of the conducted research, technological processes have been worked out for hardening these alloys in this manner. 1 figure. 2 references.

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USSR UDC 669.295.004.2

ALIMOVA, N. A., KARVATSKAYA, R. A., USACHEVA, L. A., and KOVALEV, V. YA.

"Pilot Plant Experiments on Purification of Waste Water to Remove Suspended Materials and Oils"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 143-145, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G198 by the authors).

Translation: Results are presented from industrial tests of a method for purification of titanium plant waste waters to remove suspended material and oils by mixing neutralized and little-contaminated water in a ratio of 1:2.5 or 1:2, introduction of polyacrylamide at 0.1-0.2% of the weight of suspended materials, and subsequent settling for one hour. With this mode of settling, the waste water becomes clear and colorless in 75% of its volume; this clear volume contains 10.4% mg/l suspended material, and no oil. The content of solids in the lower portion is about 2%, water 98%. After five hours settling, the compaction of the sediment is practically complete; the content of solids is then about 3.6%. 1 figure; 2 tables.

1/1

USSR

UDC 62..233.4

GABASHVILI, N. V., corresponding member of the Georgian Academy of Sciences,
GULIZADE, M. P., corresponding member of the Georgian Academy of Sciences,
KARTVELISHVILI, O. M., and KHALIMBEKOV, B. M.

"One Problem in the Optimization of the Process of Drilling Slanted Holes"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971,
pp 33-36

Abstract: A system of differential equations describing the process of drilling slanted holes with a turbine drill is derived in this article. These equations allow one to obtain the optimal parameters of the drilling operation and of the contour of the hole. The drilling parameters taken into consideration are: axial load on the bit of the turbine drill, number of revolutions of the drill, and the type of deflecting equipment needed to obtain the correct slope of the shaft. Minimum drilling time was selected as the overall criterion of optimality.

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USSR UDC: 621.374.5(088.8)

BORMOTOV, Yu. D., IVKIN, I. V., KARULIN, A. P., PARSANOV, A. P.

"A Delay Line"

USSR Author's Certificate No 280537, filed 18 Apr 67, published 9 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, abstract No 6G312 P)

Translation: A delay line is proposed which is equipped with a ferromagnetic element and a magnetizing winding which controls the delay time by changing the permeability of the ferromagnetic element. To simplify the design, a multilayered permalloy film which serves as a shield and return conductor for the delay line is used as the ferromagnetic element.

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USSR

UDC 599.323.4:591.526:59.08

LITVIN, V. Yu., KARULIN, B. Ye., NIKITINA, N. A., KARASEVA, Ye. V., and KHLYAP, L. A., Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR, Moscow

"Repeated Trapping and Radioisotopic Labeling in Studying the Use of Territory by Rodents (as Illustrated by the Common Vole)"

Leningrad, Zoologicheskiy Zhurnal, No 6, 1973, pp 931-938

Abstract: The advantages and disadvantages of studying the home ranges of small rodents (voles) by labeling them with P^{32} and Co^{60} are compared. The use of P^{32} and recording of radioactive excretions is useful in determining the size and approximate contours of the animals' ranges over several days and on individual days. Drawbacks of the technique are the small number of animals that can be observed at the same time (on common territory) and the short period in which information can be collected. Labeling the animals with Co^{60} and tracking them round the clock produces the most detailed and objective information. The resolving power of the method is very great but its usefulness is limited by the small number of animals that can be observed at the same time. Both methods yield more information than the

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201220012-9"

USSR

LITVIN, V. Yu., et al., Zoologicheskiy Zhurnal, No 6, 1973, pp 931-938

old technique of amputating toes. The choice is determined by the particular objective of a study and by the degree of precision and completeness of the results desired.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USING ISOTOPES TO STUDY THE MOBILITY AND ACTIVITY OF SMALL MAMMALS
-U-

AUTHOR--KARULIN, B.YE.

COUNTRY OF INFO--USSR

SOURCE--ZOOLOGICHESKIY ZHURNAL, 1970, NR 3, PP 444-450

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--COBALT ISOTOPE, RADIOMETER, MAMMAL, TAGGED ATOM/(U)SRP2 RADIOMETER, (U)LUCH A RADIOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1383 STEP NO--UR/0439/70/000/003/0444/0450

CIRC ACCESSION NO--AP0136737

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TAGGING SMALL MAMMALS (MOLES, RED VOLES AND SHREWS) WITH CO PRIME60 PERMITS OBSERVATION OF THE MOVEMENT OF ANIMALS WITH AN SRP-2 "KRISTALL" OR LUCH-A RADIOMETER. THE DIMENSION AND SHAPE OF THE ZONE OF AN INDIVIDUAL ANIMAL AND ITS USE OF DIFFERENT PARTS OF THE ZONE WERE DETERMINED, TOGETHER WITH THE LOCATION OF NESTS, DAILY ACTIVITY AND OTHER BEHAVIORAL CHARACTERISTICS. ANIMALS UNDER STUDY WERE TALPA EUROPEA, SOREX ARANEUS, CLETHRIONOMYS GLAREOLUS AND RHOMBOMYS OPIMUS. COBALT PRIME60 WAS CHOSEN SO ANIMALS COULD BE TRACKED IN THEIR UNDERGROUND BURROWS. ANIMALS QUICKLY ADJUSTED TO OBSERVERS. INDIVIDUAL ANIMALS WERE FOLLOWED FOR AS LONG AS THREE MONTHS. DIFFERENT ISOTOPIC LABELS MADE IT POSSIBLE TO DIFFERENTIATE INDIVIDUAL ANIMALS AND TO OBSERVE CONTACTS BETWEEN ANIMALS. FACILITY: LABORATORIYA MEDITSINSKOY ZOOLOGII, INSTITUTA EPIDEMIOLOGII I MIKROBIOLOGII, AMN SSSR, MOSCOW.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ULTRAVIOLET SPECTRA AND IONIZATION CONSTANTS OF SOME QUINOL PHOSPHATES IN AQUEOUS ALCOHOL SOLUTIONS -U-

AUTHOR-(05)-SERGEYEV, G.B., KARUNINA, L.P., BATYUK, V.A., ZENIN, S.V., SIROTA, T.V.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 112-15

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, IONIZATION, HYDROQUINONE, ORGANIC PHOSPHATE, OXIDATION, QUINONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1293 STEP NO--UR/0189/70/011/001/0112/0115

CIRC ACCESSION NO--AP0116754

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0116754
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNOWLEDGE OF THE REACTIVITY OF QUINOL PHOSPHATES IS IMPORTANT FOR THE STUDY OF THE REACTION OF CONCERTED OXIDATIVE PHOSPHORYLATION. THE UV SPECTRA OF THESE COMPDS. AND THEIR PK VALUES WERE STUDIED. IN THE SPECTRA OF THE NAPHTHOQUINOL DERIVS. STUDIED, 2 DISTINCT ABSORPTION MAX. OCCUR AT SIMILAR TO 240 AND SIMILAR TO 300 NM. IN THE SPECTRA OF THE IONIC FORM, THE ABSORPTION MAX. ARE SHIFTED TOWARDS LONGER WAVELENGTHS AND THEIR ABSORPTIVITY IS HIGHER AS COMPARED WITH THE UNIONIZED FORM OF THE COMPDS. A SHARP DIFFERENCE BETWEEN THE SPECTRA OF THE IONIC AND OF THE UNDISSOCD. FORMS ALLOWS ONE TO DET. THE IONIZATION CONSTS. THE PK MEASURED INDICATE THAT THE COMPDS. ARE WEAK ACIDS. INTRODUCTION OF 1 MORE ME GROUP INTO THE MOL. OF A METHYL NAPHTHOQUINOL PHOSPHATE LOWERS THE ACIDITY OF THE COMPD. BY SIMILAR TO 0.5 PK, WHERAS THE REPLACEMENT OF ME GROUPS BY CL ATOMS AT THE 2 AND 3 POSITIONS SHARPLY INCREASES THE ACIDITY. INCREASED DILN. WITH MEOH (FROM 50 TO 5PERCENT) RESULTS IN ENHANCED ACIDITY (BY SIMILAR TO 1 PK). THE QUINOL PHOSPHATE OXION., ACCOMPANIED BY THE FORMATION OF RESPECTIVE QUINONES, CAN BE CONVENIENTLY FOLLOWED BY UV SPECTROSCOPY AS THE SPECTRA OF THE KETONES FORMED ARE DIFFERENT FROM THOSE OF THE REAGENTS. THE PK (20DEGREES), ABSORPTIVITY, AND ABSORPTION MAX. ARE GIVEN FOR 1,4,BENZOQUINOL DIMETHYL PHOSPHATE, 2,METHYL,1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE, 2,METHYL,1,4,NAPHTHOQUINOL DIETHYL PHOSPHATE, 2,3,DIMETHYL, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE AND 2,3,DICHLORO, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE.

UNCLASSIFIED

USSR

UDC 911.3.616.981.452(574)

LAVROVSKIY, A. A., KUCHEROV, P. M., OPTYAKOVA, A. F., ROZHKOV, A. A., DEREVYANCHENKO, K. I., MATSUCA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A., CHIKRIZOV, F. D., KARUSHIN, P. A., and DUBYAGIN, P. S.

"Survival of Plague Bacteria During Interepizootic Years in the Sands Focus Area Between the Volga and Ural River"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Translation: A list is presented of reasons for the abrupt decrease in epizootic activity in the sands plague focus between the Volga and Ural Rivers. Plague bacteria, however, did not disappear from the biocenotic focus system, as evidenced by the epizootics of 1962-1963 and 1966 and the isolated cases of isolation of bacterial cultures from gerbils during depressed phases of focus life. It becomes more and more evident that the phenomenon of microfocality is an indispensible attribute of existence of plague bacteria in the biocenosis. Materials on landscape adjustment of particularly stable plague epizootics facilitate the definition, in the

USSR

LAVROVSKIY, A. A., et al., Probl. osobo opash. infektsiy (Problems of Especially Dangerous Infections -- collection of Works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Volga-Ural sands area, of several more significant regions where the plague pathogen apparently survives even during depressed phases of focus activity.

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Instruments and Measurements

USSR

UDC 621.317.794

GASSANOV, L. G., KARUSHKIN, N. F., KREMENCHUGSKIY, L. S., YASHCHISHIN, P. I.

"An SHF Power Meter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 10 Feb 70, p 43, Patent No 263697, Filed 25 Jun 68

Translation: This Author's Certificate introduces an SHF power meter which contains a pyroelectric radiation detector made in the form of an absorbing matched load, and a calibrated power source. The device is designed for improved accuracy and absolute measurements of SHF power over a broad dynamic range. It differs because one side of the pyroelectric detector is for reception in the optical range while the other is for reception of SHF radiation.

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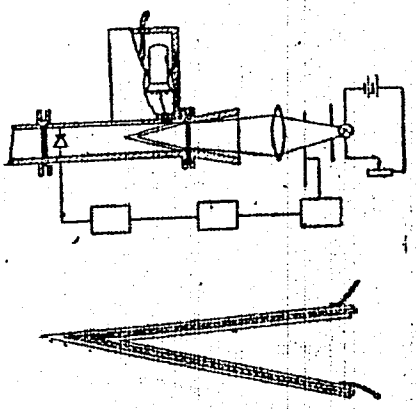
GASSANOV, L. G., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 10 Feb 70, p 43, Patent No 263697, Filed 25 Jun 68



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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THE EFFECT OF SARCOLYSIN ON THE SYNTHESIS OF NUCLEIC ACIDS IN MONOSTRATAL CULTURES OF HUMAN NEOPLASTIC CELLS -U-

AUTHOR-(02)-KARUZINA, N.P., TIMOFEYEVSKAYA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 77-80

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, CANCER, NUCLEIC ACID, ANTINEOPLASTIC DRUG, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0565 STEP NO--UR/0219/70/049/006/0077/0080

CIRC ACCESSION NO--AP0131198

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131188

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON STABLE MONOSTRATAL CULTURES OF CELLS FROM HUMAN TUMORS (CANCER OF THE STOMACH OVARY, PANCREAS, ANGIOSARCOMA, MESENCHYMOMA) THE AUTHORS STUDIED THE EFFECT OF SARCOLYSIN IN DIFFERENT CONCENTRATIONS ON THE INCORPORATION OF LABELLED PRECURSORS INTO NUCLEIC ACIDS AND PORTEIN. THE FOLLOWING LABELLED PRECURSORS WERE USED: ADENINE-8-C PRIME14 (21 MU C-GM), URIDINE-2-C PRIME14 (26 MU C-GM), LYSINE-DL-I-C PRIME14 (56 MC-GM). CELLULAR CULTURES OF THE CUTANEOMUSCULAR TISSUE OF HUMAN EMBRYO SERVED AS CONTROL. SARCOLYSIN IN A DOSE OF 100 MU G-ML INHIBITED THE INCORPORATION OF LABELLED ADENINE INTO NUCLEIC ACIDS OF NEOPLASTIC CELLS FROM 74PERCENT TO 52PERCENT IN DIFFERENT LINES. IN THESE CONDITIONS OF THE EXPERIMENT THE INHIBITION PERCENTAGE OF SYNTHESIS OF NUCLEIC ACIDS OF EMBRYONIC CELLS EQUALLED 37. SARCOLYSIN USED IN DOSES OF 2.5-50 MU G-ML DISPLAYED A DIVERSE SENSITIVITY OF NEOPLASTIC CELLS OF THE LINES STUDIED: A 50PERCENT INHIBITION OF INCORPORATION OF LABELLED PRECURSOR INTO RNA WAS ACHIEVED WITH SARCOLYSIN CONCENTRATION OF 8.5 MU G-ML (FOR OVARIAN CANCER) AND 42.5 MU G-ML (FOR MESENCHYMOMA). INHIBITION OF LABELLED LYSINE INCORPORATION INTO PROTEIN WAS SIMILAR FOR ALL LINES (60-66PERCENT), FOR EMBRYONIC CELLS, 47PERCENT. FACILITY: P. A. GERTSEN MOSCOW ONCOLOGICAL INSTITUTE.

UNCLASSIFIED

USSR UDC: 621.317.783(088.8)

GASSANOV, L. G., KARUSHKIN, N. F., KREMENCHUGSKIY, L. S., YASHCHISHIN, P. I.

"An SHF Power Meter"

USSR Author's Certificate No 263697, filed 25 Jun 68, published 24 Jun 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A323 P)

Translation: This Author's Certificate introduces an SHF power meter which contains a pyroelectric radiation receiver made in the form of a matched absorbing load, and also a calibrated power source. As a distinguishing feature of the patent, precision is improved and provision is made for absolute measurements of SHF power by using a receiver of emission in the optical range as one side of the pyroelectric pickup, and a receiver of SHF emission as the other side. E. L.

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USSR

UDC: 669.295:628.3

AKIMOVA, N. A., KARYATSKAYA, R. A., and KOSTROMINA, L. A.

"Flow Chart for Recycling the Water Supply at Titanium and Magnesium Plants"

Moscow, Tsvetnyye metally, No 3, Mar 72, pp 46-48

Abstract: Presented are the results of a series of research projects co-sponsored by the Titanium Institute with other titanium and magnesium combines on designing a water recycle flow chart for these combines. The new flow chart includes neutralization and demineralization of titanium and magnesium sewage for the purpose of making the water suitable for processing. The magnesium gas purifier drainage is decontaminated from hypochlorites with hydrochloric acid and phenobic water, while the spent solution is demineralized by distillation to produce commercial calcium chloride meeting GOST 450-58 specifications. All other neutralized and low-contamination drainages are combined at 1:2 ratios, treated with polyacrylamide (to remove oils) and demineralized by electrodialysis. The desalted water has a residual salt content of 0.5-1.0 g/l. The new system

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USSR

AKIMOVA, N. A., et al, Tsvetnyye metally, No 3, Mar 72, pp 46-48

will practically eliminate both the drainage of waste water into the water reservoir and the disposal of salts within the city limits. (1 illustration, 1 table, 4 bibliographic references).

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USSR UDC 669.295.004.2

AKIMOVA, N. A., KARVATSKAYA, R. A., USACHEVA, L. A., and PAVLYUK, YU. S.

"Desalinization of Waste Water in Titanium-Magnesium Production"

Sb. tr. Vses. n.-i. i proyektn. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 8, pp 109-113 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G156)

Translation: Investigations are conducted of the desalinization of waste water from a gas purification installation in Mg production (hypochlorite pulp). A principal diagram for the neutralization and desalinization of waste water is proposed: filtration, breaking down of $Ca(OCl)_2$ in HCl filtrate, thereafter of phenol water, vacuum evaporation, evaporation in steel boats. As a result, a melted $CaCl_2$ is obtained which corresponds to GOST 450-58. 2 ill., 4 tables. Authors' abstract

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USSR

UDC 669.295.053.24

PAVLYUK, YU. S., KARVATSKAYA, R. A., AKIMOVA, N. A., and SYCH, M. P.

"Study of the Properties of Powder of Ore-Thermal Furnaces"

Sb. tr. Vses. n.-i. i proyektn. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 105-109 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G155)

Translation: Results are described of an investigation of the fineness and chemical composition of powder carried away from the ore-thermal furnaces of a titanium-magnesium plant. When briquettes are used in the operation of ore-thermal furnaces the powder consists of particles which are considerably finer than those obtained when a concentrate is used. The chemical analysis of the powder shows a composition analogous to that of the charge material. 3 ill., 3 tables. Authors' abstract.

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USSR

UDC 628.3+669.295

AKIMOVA, N. A., KARVATSKAYA, R. A., USACHEVA, L. A., and KOVALEV, V. Ya.

"Semiindustrial Experiments on Removing Suspended Substances and Oils From Runoff Waters"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 143-145

Translation: A description is given of the results of industrial tests on purifying runoff at the DTM [expansion unknown] Plant of suspended substances and oils by mixing neutralized and slightly polluted runoff in a ratio 1:2.5 or 1:2, introducing polyacrylamide in the amount of 0.1-0.2% of the suspended substances, and subsequent standing for one hour. It is demonstrated that under such settling pool operating conditions, a clear, colorless, purified 75% (volumetric) amount is received, which contains an average of 10.4% mg/liter of suspended substances, and no oil. In the settled deposit, the content of the hard part averages 2% and water 98%. After five hours of settling in a separate reservoir, consolidation of the deposit practically ends and the content of the hard part averages 3.6%. One illustration and two tables.

Psychiatry

USSR

UDC 616.891-072.8+616.891-07:616.154.452/.453

KARVASARSKIY, B. D., IOVLEV, B. V., KALININ, O. M., STABROVSKIY, Ye. M., SUSLOV, V. I., and TARABRINA, N. V., Department of Neuroses and Psychotherapy, Leningrad Scientific Research Psychoneurological Institute imeni V. M. Bekhterev

"Connection Between Experimental Psychological Characteristics of the Personality and Biochemical Indexes in Relation to Problems of the Study of Psychic Stress in Neurotics"

Moscow, Zhurnal Nevropatologii i Psikhiatrii, 1971, Vol 71, No 8, pp 1199-1203

Abstract: Correlations between psychological data obtained from various tests (MMPI, frustration method of Rozenzweig, Eysenck questionnaire, and others) and biochemical data (blood tests for 11-hydroxycorticosteroids, serotonin, protein-bound iodine; urine tests for dopamine, noradrenalin, adrenalin, vanillylmandelic acid and others) were established. These relationships were determined for 48 neurotics before applied stress, and for a control group of healthy persons. The relationships were arrived at by the method of regression analysis using a computer.

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USSR

KARVASARSKIY, B. D., et al., Zhurnal Nevropatologii i Psikhiatrii, 1971, Vol 71, No 8, pp 1199-1203

It is clear from the results that regression analysis is valuable in forecasting the effects of stress on neurotics, which in turn makes it potentially valuable in studying the pathogenesis and therapy of neuroses.

2/2

B. D. KARVASARSKIY

Acc. Nr: AP0052090 Ref. Code: UR0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, 1970, Vol 70, Nr 3, pp 399-408

FACTOR ANALYSIS IN STUDIES WITH THE USE OF RATING PSYCHOPATHOLOGICAL SCALES

B. V. Iovlev, M. M. Kabanov, O. M. Kalinin, B. D. Karvasarskiy, K. V. Korabelnikov

The presentation deals with the possibilities of using rating psychopathological scales in the evaluation of problems of rehabilitation of mental patients. The authors report and analyze the data of factor analysis in schizophrenia, depressive states, obtained with the aid of computors. The results demonstrate that it is possible to use factor analysis for the study of interconnections of psychopathological symptoms as well as of correlations between psychopathological and biological indices.

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REEL/FRAME
19820628

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USSR

UDC 514.183:541.124/128

ZARIF'YANTS, YU. A., KARYAGIN, S. N., KISELEV, V. F., KHRUSTALEVA, S. V., and CHUKIN, G. D., Moscow State University imeni M. V. Lomonosov

"Possibility of the Control of Binding Forms of Adsorbed Molecules by Means of a Change in the Electronic State of the Semiconductor Surface"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 109-112

Abstract: IR and EPR spectra of p-benzoquinone (BQ) molecules adsorbed on rutile were studied. First passage of BQ over rutile powder leads to the the appearance of two bands in the IR spectrum at 1505 and 1470 cm^{-1}. The first band was assigned to >C:O grouping of the BQ molecule bound to coordination unsaturated Ti^{3+} atoms. This band is quite stable, even after heating the complex to 400° in vacuum it does not disappear. The 1470 cm^{-1} band was assigned to an anion radical of BQ formed by a transfer of an electron from the solid body directly onto the orbitals of the adsorbed molecule. With more complete saturations more bands appear: 1675 cm^{-1} assigned to BQ molecules bound with weak van der Waal forces to the surface, 1657 cm^{-1} -- due to the molecules hydrogen bonded to hydroxyl groups. Adsorption of BQ results in a negative charge on the surface of rutile. Population of the surface levels increases with increased Fermi levels. It was shown that with higher degree of reduction

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USSR

ZARIF'YANTS, YU. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 109-112

the intensity of the 1470 cm^{-1} band increases, while oxidation of the sample (lowering Fermi levels) prior to the adsorption of BQ results in complete dis appearance of this band. When the rutile specimen was heated to 200° (after passage of BQ), the 1675 and 1657 cm^{-1} bands disappeared, the intensity of 1470 cm^{-1} bands increased, and that of 1505 cm^{-1} decreased respectively. At 400° the 1470 cm^{-1} band exceeds substantially the intensity of the 1505 cm^{-1} band. Also, rutile specimens irradiated with a UV lamp (filter transparent in the 400-700 mu region) shows identical behavior. Thus it was possible to stimulate a change in binding form of the molecules adsorbed on the surface, reflected by the IR spectra, by generating excess carriers through the illumination of solid body.

2/2

USSR

4

UDC: 621.694.2

BEZNOGIKH, YU. D., ZINOV'YEV, L. P., KADYROV, R. B., KARYAGIN, YU. K., PLYASHKEVICH, N. N., POPOV, V. A., SEMENYUSHKIN, I. N. and STEPANYUK, V. L.

"Injector Debuncher of the OIYAI Synchrophasotron With Energy Modulation of the Accelerated Beam"

Moscow, Pribory i Tekhnika Eksperimenta, Zhurnal Akademii Nauk SSSR, No 1, Jan/Feb 72, pp 37-38

Abstract: The particle intensity in the OIYAI synchrophasotron can be increased by 75% by reducing the energy scattering in the outlet beam and by modulating the energy of the injected beam. Both functions can be performed by a single high-frequency debuncher resonator located at a certain distance from the linear accelerator.

The debuncher resonator is 1/4 of the wave length of the round coaxial line. The tuning is achieved by deflecting the end walls and by a secondary power input. The diagram and the description of this device are presented. Some experimental results obrained with and without the debuncher are also given.

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1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--NATURE AND FORMATION MECHANISM OF GHOSTS IN INGOTS ARC MELTED IN VACUUM -U-

AUTHOR-(03)-KARYAKIN, A.P., SHVED, F.I., SMIRNOV, YU.D.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1) 62-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CRYSTALLIZATISN, INGOT, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/0296 STEP NO--UR/0133/70/030/001/0062/0064

CIRC ACCESSION NO--AP0053281

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053281

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF BATH ROTATION DURING SOLIDIFICATION WAS STUDIED IN THE LAB. AND IN A PLANT. ROTATION LOWERS THE TEMP. GRADIENT OF A BATH AND CHANGES ITS SHAPE AND DEPTH CAUSING A ZONAL REDISTRIBUTION OF IMPURITIES ALONG THE LENGTH OF AN INGOT AND LEADS TO A DISORIENTED DENDRITIC STRUCTURE. THIS REDISTRIBUTION IN THE 2 PHASE SYSTEM PRODUCES SEGREGATED AREAS IN INTERDENDRITIC VOLS. EXPRESSING THEMSELVES AS GHOSTS WHICH GROW IN SIZE WITH LONGER ROTATION AND REACH FULL DEVELOPMENT WHEN THE WHOLE SOLIDIFICATION CYCLE TAKES PLACE DURING ROTATION.

UNCLASSIFIED

Luminescence

USSR

UDC 543.70

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ANTKINA, L. I., BAGREYEV, V. V., DOBROLYUBSKAYA, T. S., KOLOTOV, Yu. A., KARYAKIN, A. V., MIKLUSHANSKIY, A. Z., NIKITINA, N. S., PAZHI, P. N., YAKOVLEV, Yu. V.

"Luminescent Determination of Gadolinium, Europium and Samarium as Impurities in Metallic Uranium"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XX, No 7, pp 1014-1016

Abstract: A quantitative luminescent method of analyzing gadolinium, europium and samarium impurities in metallic uranium is described. A large part of the uranium was separated by a chromatographic method, passing uranyl sulfate in 1 N H_2SO_4 through a column with KaU-2 cation-exchanger. The rare-earth element impurities remaining in the column were washed out by 4-5 N HCl. It was established photometrically with the application of arsenazo III that an unacceptable high amount of uranium (~ 0.04 percent from a weighed sample of 10 grams of uranyl sulfate) was washed into the eluate, making necessary the development of additional methods for separation and determination of the rare-earth elements. Luminescent methods were then used. Gadolinium, europium and samarium in metallic uranium were analyzed by the radiation spectra of luminophors based on Y_2O_3 for gadolinium and YVO_4 for europium and samarium. The rare-earth elements were concentrated chromotographically, and the luminescence was spark-excited. A phosphoroscope was used to measure the spectra. The sensitivity of analyzing

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ANIKINA, L. I., et al., Zhurnal Analiticheskoy Khimii, Vol XX, No 7, pp 1014-1018

gadolinium, europium and samarium was $2 \cdot 10^{-6}$ percent, and the variation factor was 30 percent. The method permits quantitative determination of the indicated rare-earth elements from a weighed sample of up to 1 gram of uranium. As a control, the additive method was used. Gadolinium, europium and samarium were introduced in the amounts of $2 \cdot 10^{-5}$ and $5 \cdot 10^{-5}$ percent after decomposition of the metal uranium by nitric acid. An analysis flow chart and sample luminescence spectra are given in the article.

1/2 016 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF INFRARED SPECTROSCOPY FOR STUDYING THE STATE OF WATER AND DETERMINING TRACES OF WATER IN CARBON TETRACHLORIDE -U-

AUTHOR-(03)-KARYAKIN, A.V., TOKHADZE, V.L., MAYSURADZE, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2) 315-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTROSCOPY, WATER, CARBON TETRACHLORIDE, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1496 STEP NO--UR/0075/70/025/002/0315/0318

CIRC ACCESSION NO--AP0112490

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0112490

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SPECTROANAL. METHOD FOR H SUB2 O DETN. IN CCL SUB4 IN THE 4000-3000 CM PRIME NEGATIVE1 RANGE IS DESCRIBED AND THE STATE OF THE H SUB2 O IN THE COMPD. WAS STUDIED. A HIGHER SENSITIVITY OF SYMMETRIC VIBRATIONS BAND TO THE CHANGES OF THE INTERMOLECULAR INTERACTION WAS CONFIRMED WHICH IS ESSENTIAL IN THE USE OF ONE OR ANOTHER VALENCE VIBRATION BAND FOR ANAL. PURPOSES. ONLY THE BAND OF ASYMMETRIC VIBRATIONS OF H SUB2 O MOLS. CAN BE RECOMMENDED FOR QUANT. DETNS. BECAUSE IT IS NEARLY INSENSITIVE TO THE CHANGES OF INTERMOL. INTERACTION IN THE SOLN. AND THE ABSORBANCE IS DEPENDENT ON H SUB2 O CONCN. THE SENSITIVITY OF H SUB2 O DETSN. IS 1 TIMES 10 PRIME NEGATIVE4 WT. PERCENT. TWO VERY INTENSE BANDS ARE FOUND WITH MAX. AT 3641 AND 3705 CM PRIME NEGATIVE1. THE LATTER BAND BELONGS TO THE ASYMMETRIC VIBRATIONS OF H SUB2 O MOLS. THE ERROR OF THE DETN. OF H SUB2 O ABSORBANCE IN THIS BAND IS 5-10PERCENT.

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132237

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERMOL. INTERACTION OF H SUB2 O WITH MECN WAS STUDIED BY MEANS OF IR SPECTROSCOPY IN THE ABSENCE AND IN THE PRESENCE OF SALTS. IN THE PURE H SUB2 O-MECN MIXTS. (WITHOUT THE SALTS) AT H SUB2 O 0.01-0.7 MOLE-L., THE SPECTRUM HAS 2 ABSORPTION BANDS, AT 3540 AND 3630 CM PRIME NEGATIVE1. ABOVE 0.7 MOLE-L., THESE BANDS MERGE INTO 1 LARGE BAND AND AT STILL GREATER CONCNS. THEY BECOME IDENTICAL WITH THE ABSORPTION BAND OF THE LIQ. H SUB2 O. AT H SUB2 O CONCN. DECREASE FROM 0.7 MOLE-L. TO 0 THE INTENSITY OF THESE BANDS DECREASED ALMOST TO COMPLETE DISAPPEARANCE. THE EFFECTS OF VARIOUS IONS ON THE POSITION AND INTENSITY OF THE BANDS IN THE H SUB2 O-MECN SYSTEM WAS STUDIED BY INTRODUCTION OF NA, LI, CA, MG, AND (C SUB4 H SUB9) SUB4 N PRIME POSITIVE IODIDES AND LICLO SUB4. THE INTRODUCTION OF ANY OF THESE SALTS RESULTED IN THE APPEARANCE OF 2 NEW BANDS, THE WAVELENGTHS OF WHICH WERE THE SHORTEST FOR THE MG AND THE LONGEST FOR THE (C SUB4 H SUB9) SUB4 NI. THE ASSOCN. H SUB2 O-MECN DECREASES WITH THE 1ST ADDN. AND PROGRESSIVE INCREASE OF THE SALT CONCN. THE NEW BANDS ARE DUE TO THE SALT-H SUB2 O BONDS. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF ULTRASOUND ON FURFURAL HYDROGEN PEROXIDE WATER SYSTEMS -U-

AUTHOR-(03)-BADOVSKAYA, L.A., KARYAKIN, A.V., KULNEVICH, V.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 221-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--FURFURAL, HYDROGEN PEROXIDE, ULTRASONIC RADIATION, FUMARIC ACID, ACRYLIC ACID, FORMIC ACID, MALEIC ACID, SUCCINIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0169 STEP NO--UR/0153/70/013/002/0221/0224

CIRC ACCESSION NO--AT0132446
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRODUCTS OF THE REACTION OF FURFURAL (I) WITH H SUB2 O, 30PERCENT H SUB2 O SUB2, OR 1.5-3.0PERCENT H SUB2 O SUB2 AND H SUB2 O, FOR 5 HR AT 25DEGREES, WHILE THE MIXT. IS ULTRASONICALLY IRRADIATED AT 800 KHZ, INCLUDE PYROMUCIC, FUMARIC, BETA FORMYLACRYLIC, FORMIC, MALEIC, SUCCINIC, AND MALIC ACIDS. UNDER IRRADN., THE RATE OF LOSS OF I AND OF FORMATION OF TOTAL ACIDS IS 2 OR MORE TIMES AS RAPID AS IN ITS ABSENCE. FURTHER, MALIC ACID IS NOT A SIGNIFICANT PRODUCT IN THE ABSENCE OF ULTRASONIC IRRADN., SO THAT THE EFFECT OF THE LATTER IS NOT ONLY AN ACCELERATION OF OXIDN., DUE IN PART TO THE PRODUCTION OF PEROXIDE DURING IRRADN., BUT ALSO INCLUDES INITIATION OF HYDROGENATION REACTIONS. FACILITY: KRASNODAR. POLITEKH. INST., KRASNODAR, USSR.

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130079

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FLASH EXCITATION SYSTEM DESCRIBED USED A XE PULSE LAMP FOR EXCITATION, EITHER WITH A SINGLE LIGHT PULSE OF DURATION 5 TIMES 10 PRIME NEGATIVE5 SEC OR MULTIPULSE EXCITATION AT A FREQUENCY OF 300 PULSES-SEC (DURATION OF EACH PULSE 10 PRIME NEGATIVE3). LIGHT INTENSITY FALLING ON THE SAMPLE WAS 400 ERGS-CM PRIME2-SEC. THE DETECTING SYSTEM WAS FORMED BY A FILTER SYSTEM FOR VARIOUS WAVELENGTHS IN THE REGION 390-560 NM. THE DIFFERENTIAL ABSORPTION SPECTRA (LIGHT VS. DARK) OF PHOTOSYNTHESIZING SYSTEMS WERE MEASURED IN CHLORELLA, ISOLATED (ACTIVE AND REACTIVATED BY PHENAZINE METHOSULFATE AND ASCORBIC ACID) CHLOROPLASTS FROM PEA, AND CHLOROPLAST FRAGMENTS PRODUCED BY SONICATION. PULSE EXCITATION INDUCED SEVERE SPECTRAL CHANGES, ESP. IN REACTIVATED CHLOROPLASTS. ABSORPTION BANDS AT 440 AND 515-52 NM WERE OBDS.; THESE BANDS WERE NOT DETECTED BY OTHER TECHNIQUES AND MAY BE DUE TO REVERSED ELECTRON TRANSFER OXIDIZING CHLOROPHYLL A TO CHLOROPHYLL B. ADDN. OF DICHLORCINDOPHENOL (I) TO REACTIVATED CHLOROPLASTS COMPLETELY INHIBITED BOTH 400 AND 515 NM BANDS DUE TO EFFECTIVE ELECTRON TRANSFER, (CHLOROPHYLL B) PRIME NEGATIVE PLUS I YIELDS CHLOROPHYLL B PLUS I PRIME NEGATIVE. DIFFERENTIAL SPECTRA OF SONICATED CHLOROPLASTS WERE IDENTICAL WITH THOSE OF REACTIVATED ONES EXCEPT THAT THE 475 BAND WAS SHIFTED TO 425 NM, WHICH IS CHARACTERISTIC FOR ACTIVE CHLOROPLASTS.

UNCLASSIFIED

USSR UDC 546.623'21+546.74'21):541.123.2

GAVRISH, A. M., ZOZ, YE. I., ANSIMOVA, T. A., PITAK, N. V., and KARYAKIN, L. I., Ukrainian Scientific Research Institute of Refractory Materials

"Processes Taking Place in the Al_2O_3-NiO System During Heating in Oxidizing and Reducing Media"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1175-1177

Abstract: An investigation was made of the change of phase composition of the carrier during heating in oxidizing and reducing media in the presence of a nickel catalyst. The specimens were prepared from the principal components of the carrier, electrocorundum (with 98.6% Al_2O_3, grain size $< 50\ \mu$), technical alumina (98.6% Al_2O_3 grain size $< 50\ \mu$), and nickel nitrate ($Ni(NO_3)_2 \cdot 6H_2O$). The corundum and alumina specimens had additions of 1, 10, 25, and 50% nickel nitrate. With an increasing concentration of nickel nitrate, there are only weak lines of spinel at 1500°C; at 10% the spinel develops at 1200°C, and at 25% it develops at 900°C. According to findings of other authors, the development of spinel was observed at 700°C and up to 1500°C. The behavior of corundum and alumina specimens in the process of

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201220012-9"

USSR

GAVRISH, A. M., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1175-1177

temperature increase up to 1500°C and during holding in air is discussed and compared with data of other authors. One table, eight bibliographic references.

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USSR

UDC 621.382.3

KARYAKINA, N.V., POLIKARPOV, E.D., KHENKIN, E.A.

"Investigation Of The Noise Characteristics Of Planar Transistors"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 52-58 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B234)

Translation: The results are presented of an experimental investigation of the noise characteristics of planar transistors, and a comparison is made with the noise characteristics of transistors produced without using planar technology. 6 ill. 1 ref. Author's abstract.

1/1

USSR

YAGUBETS, A. N., KARYAKIN, V. V., KOVALEV, V. V., BUZINOVA, V. P., and BOBANOVA, ZH. I., Kishinev

"Electrodeposition of Nickel and Iron Coatings Alloyed with Boron"

Kishinev, Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

Abstract: A study was carried out to explore the possibility of preparing boron-containing alloys by an electrolytic method. The nickel electrolyte used had a composition (in g/l) of nickel sulfate (80), nickel nitrate (15), ammonium chloride (30), potassium bisulfite (3), sodium citrate (60), triethanolamine (35), trilon B (35), mercaptophthalic anhydride (0.4), and sodium borohydride (0.4). The acidity of the nickel electrolyte varied from a pH of 10.5 to 14, the temperature from 20 to 70°C, the cathodic current density from 3 to 10 amp/decimeters^2. The composition of the iron electrolyte used was (g/l) ferric sulfate (80), Trilon B (132), triethanolamine (154), sodium borohydride (0.5). The electrolyte temperature was 80°C, the pH 11-12, the cathodic current density varied between 5-15 amps/decimeters^2. The boron content in the powder, microstructure, microhardness, and phase composition of the powder in relation to variation of electrolysis conditions were investigated. 1/2

USSR

YAGUBETS, A. N., et al., Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

The addition of stabilizers displaced the polarizarization curve of nickel, the area and degree of displacement depending on the stabilizer. The iron electrolyte was not affected by the addition of sodium borohydride. The boron uptake by the nickel and iron powders was found to be dependent on the electrolysis conditions and in the nickel amounted to 1-3% by wt. and in the iron up to 7% by wt. Microhardness was also dependent on the electrolytic conditions.

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USSR

UDC 532.517.2

KARYAKIN, V. YE.

"Application of the Characteristic Method to the Solution of All-Purpose Equations of Laminar Boundary Layers"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamics), No 313, 1970, pp 20-28

Translation: This article contains a study of the application of the characteristic method to the solution of the multidimensional all-purpose equation of a laminar stationary boundary layer in an incompressible liquid. It is demonstrated that it is possible to draw the characteristic along which the all-purpose equation converts to the Prandtl equation through each point in the space of the shape parameters $\{f_k\}$.

turns out that the region of existence of the solution is bounded by a limiting set of characteristics emanating from the singularity $f_1 = f_{10}$ $f_2 = f_3 = \ldots = f_n = 0$ where $F(f_{10}, 0, 0, \ldots, 0) = 0$.

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USSR

KARYAKIN, V. YE., Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamics), No 313, 1970, pp 20-28

Graphs of the solution of the all-purpose equation in the two-parametric approximation and also the solution along the limiting characteristics obtained on the BESM-2M and BESM-4 computers are presented. There is 1 table, 2 illustrations and a 2-entry bibliography.

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USSR UDC 546.65.661.185.223

AMELIN, A. N., and KARYAKIN, Yu. V., Voronezh Technological Institute

"Investigation of the Sorptive Properties of Charcoal Activated With Phosphoric Acid"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 8, Aug 73, pp 1851-1852

Abstract: Dried charcoal was covered with phosphoric acid, and after 24 hrs was calcined in open crucibles with free air access. The optimal conditions for this treatment are: temperature 475°, concentration of phosphoric acid 25-30 percent, the ratio of solid to liquid phase 1:10. Sorption properties with respect to chlorine and alkali are reported. It is concluded that treatment of activated charcoal with phosphoric acid leads to a formation of carboxyl and phenolic groups on its surface and to some extent also to the phosphatation of the surface.

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Acc. Nr. AP0033947

Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code UR0078

K

67326r Effect of fluoride ion on molybdic acid polymerization. Kryachko, E. N.; Karyakin, Yu. V. (Kafedra Neorg. Khim., Voronezh. Tekhnol. Inst., Voronezh, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 26-8 (Russ). Effect of F^- on molybdate polymn. was studied spectrophotometrically. Polymn. decreased with increasing F-Mo ratio and at F-Mo ratio 10:1, it ceased. The presence of F^- shifts initiation and termination of molybdate polymn. to a region of higher concns. HMJR

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REEL/FRAME

19710574

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CARBONYL COMPLEXES OF RHODIUM (I) WITH ALIPHATIC AND AROMATIC BIFUNCTIONAL LIGANDS -U-

AUTHOR-(02)-KARYAKINA, G.I., KHIDELKEL, M.L.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 940-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, RHODIUM COMPOUND, COMPLEX COMPOUND, HEXAMETHYLENEDIAMINE, QUINOLINE, DIAMINE, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1025 STEP NO--UR/0062/70/000/004/0940/0942

CIRC ACCESSION NO--AP0134737

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLORED BIDENTATE COMPLEXES OF RH(I) WITH (CH SUB2) SUB6 (NH SUB2) SUB2, (CH SUB2) SUB10 (NH SUB2) SUB2, (O,H SUB2 NC SUB6 H SUB4) SUB2, O,PHENANTHROLINE, AND 8,8 PRIME,DIHYDROXY,5 PRIME,BIQUINOLINE (I) WERE PREPD. AND ANALYZED. MONODNETATE COMPLEXES WERE ALSO FORMED WITH O,PHENENTHROLINE AND (I,H SUB2 NC SUB6 H SUB4) SUB2. THE LATTER WERE EVIDENTLY FORMED FROM THE FORMER BY CLEAVAGE OF THE RH,N BOND BY EXCESS LIGAND AIDED BY THE TRANS EFFECT OF THE CO GROUP. THE GENERAL FORMULAS OF THE COMPLEXES WERE RH SUB2 (CO) SUB4 CL SUB2.L WHERE L IS THE LIGAND MOL., OR RH SUB2(CO) SUB4 L, WHERE L EQUALS I. THE PRODUCTS WERE ACTIVE IN OXIDN. REDN. REACTIONS AND THEIR IR SPECTRA SHOWED THE BANDS OF BOUND NH SUB2 GROUP AND 2 INTENSE BANDS OF THE CO GROUPS IN CIS POSITION. THE RH ATOM IS CLEARLY BONDED TO THE N ATOMS OF THE DIAMINES. HEATING 8,QUINOLINOLATORHODIUM DICARBONYL WITH 4,4 PRIME,BIPYRIDINE ALSO GAVE A RED COMPLEX (II) WHICH WAS STABLE IN AIR. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DETERMINATION OF THE ADHESION OF POLYMERIC MATERIALS TO BASE MATERIALS -U-
AUTHOR-(03)-KUVARZIN, I.N., PYATYKHIN, L.I., KARYAKINA, M.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,976
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYMER, ADHESION, SURFACE ACTIVE AGENT, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1084 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116550
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADHESION OF POLYMERIC MATERIALS TO BASE MATERIALS IS DETD. BY SUPPLYING THE ADHESIVE SUBSTRATE BORDER OF SEPN. WITH SURFACTANT AND FIXING THE DISTRIBUTION RATE OF THE BREAKOFF FRONT.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STATISTICAL MATHEMATICAL METHOD FOR EVALUATING THE ATMOSPHERIC RESISTANCE OF PAINT AND VARNISH COATINGS ACCORDING TO LABORATORY TEST

AUTHOR-(02)-ADLERBERG, M.M., KARYAKINA, M.I.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 60-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ENAMEL, PAINT, VARNISH, ATMOSPHERIC CONDITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0690 STEP NO--UR/0303/70/000/001/0060/0062

CIRC ACCESSION NO--AP0119598

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119598

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STATISTICAL EVALUATION WAS MADE OF THE RESULTS OBTAINED IN THE FIELD AND UNDER ACCELERATED LAB. AGING CONDITIONS. IN BOTH CASES THE LOSS OF SURFACE BRIGHTNESS WAS MEASURED AS A FUNCTION OF TIME. THE EQUIV. EXPOSURE TIMES IN THE FIELD (TAU) AND IN THE LAB. (TAU SUBO) STATISTICALLY OBEY THE RELATION TAU EQUALS ALPHA TAU SUBO PRIME8. THE COEFFS. A AND B WERE DETD. FOR SEVERAL SOVIET ENAMELS.

UNCLASSIFIED

USSR UDC 669.018.44

FROLOV, YU. P., KARYAKINA, N. V.

"Variation of the Structure and Properties of High-Alloy Alloys after Prolonged Aging"

Tp. Mosk aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp 228, pp 43-50 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 4I739)

Translation: A study was made of a high-alloy heat-resistant alloy whose chemical composition corresponded to technical specifications. Heat treatment was carried out under the following conditions: quenching from 1220° for four hours, cooling in the air, quenching from 950° for two hours, cooling in the air, aging at 980°, 25, 100, 200, and 500 hours. After aging, the structure and properties of the alloy were investigated. It was demonstrated that during the process of prolonged aging of the alloy at 980°, structural transformations take place which are connected with coagulation of the hardening phase, variation of the amount and composition of the carbide phases, and variation of the grain boundary structure. Oxidation of the surface of the specimens takes place, and the depth of the oxidized layer depends linearly on the aging time. Accordingly, the short-term strength and stress-rupture strength drop for smooth specimens and vary with respect to the complex law for notched samples. 6 illustrations and a 3-entry bibliography.

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1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--WET DISINFESTATION OF EMPTY STOREHOUSES WITH LEBAYCID -U-

AUTHOR-(02)-KARYAN, A.A., KALBERGENOV, G.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(1), 27-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECTICIDE, INSECT CONTROL/(U)LEBAYCID INSECTICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0721 STEP NO--UR/0394/70/008/001/0027/0028

CIRC ACCESSION NO--AP0108927

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108927

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEBAYCID AT 0.5 G-M PRIME2 APPLIED IN 0.3 L. H SUB2 O-M PRIME2 WAS FULLY EFFECTIVE AGAINST GRAIN CURCULIO, CONFUSED FLOUR BEETLE, AND TWO SPECIES OF MEAL BEETLE.

Titanium

USSR UDC 669.295.31

REZNICHENKO, V. A., MENYAYLOVA, G. A., KARYAZIN, I. A., KHALIMOV, F. B., VOROBEYCHIK, A. I., and KIPRICH, N. A., Moscow

"Phase Transformations in the Process of Oxidation of High-Titanium Slag"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, 1973, pp 48-54

Abstract: The crystallo-optical method was used in a study of the processes taking place in the oxidation of a solid solution of anosovite, the principal phase of high-titanium slags. During the oxidation of high-titanium slags, crystallo-chemical transformations occur, during heating, in the anosovite lattice: below 400°C, oxidation reactions take place in titanium of lowest valencies in Ti^{4+} with TiO_2-separation in form of an independent phase; above 500°C, Fe^{2+} oxidizes to Fe^{3+} and the products of the reaction form with a part of free rutile a solid solution on the base of pseudobrookite ($Fe_2O_3 \cdot TiO_2$) lattice. The phase transformations in the case of maximum oxidation of anosovite by the oxygen of air and water vapors at 700°C and higher temperatures show a similar character: the reactions take place topochemically with the final formation of rutile and the solid solution on the base of pseudobrookite lattice. Three figures, three tables, 19 bibliographic references.

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USSR UDC 669.295.31

KARYAZIN, I. A., REZNICHENKO, V. A., KHALIMOV, F. B., VOROBEYCHIK, A. I., MENYAYLOVA, G. A., KIPRICH, N. A., and GORDEUCHIK, R. A., Moscow

"Oxidation of High-Titanium Slag on Heating in Atmospheres of Air and Water Vapors"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 37-43

Abstract: An experimental study was made of the oxidation of high-titanium slag of various fractional compositions and containing 10-12% FeO on heating up to 1000°C in air and in water vapor atmospheres. The oxidation dependences of titanium slag on the type of the oxidizing medium (oxygen of air, water vapor) and the temperature and size of slag comminution are discussed by reference to diagrams. The oxidation rate of slag in air was found to be considerably higher (twice as high at 700°C) than in water vapors. Under conditions of complete oxidation at temperatures from 300 to 1000°C, the highest oxidation degree is attained at 700°C, yielding in both oxidizing media products of similar chemical composition. On heating up to 700°C, the oxidation process of slag proceeds in two stages; the first is determined by a selective oxidation of titanium of lower valencies (below 400°C), and the second stage begins at temperatures over 500°C and depends on intensive oxidation of bivalent iron. Three figures, one table, ten bibliographic references.

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UDC 669.295:549.6

REZNICHENKO, V.A., MENYAYLOVA, G.A., KARYAZIN, I.A., and VOROBEYCHIK, A.I.

"Effect of Titanium Dioxide on Structure and Technological-Chemical Properties of High-Titanium Slags"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 49-54

Abstract: The degree of exposure of slags in sulfuric acid was studied by mixing 100-gram specimens of slag in sulfuric acid (89%) in a 1:1.9 ratio. Decomposition occurred with continuous heating (in the 190-210° range) and with stirring. After decomposition, the melt was exposed for 2 hours at 20°, then cooled and leached with water (6 hours at 75-80°). High-titanium slag obtained in the smelting of Irshinskiye ilmenite concentrates in ore-heating electric furnaces were investigated. Mineralogical studies of specimens of high-titanium slags showed that the principal dominant phase is anosovite. Data showed that the presence in slag of excess titanium dioxide crystallizing as rutile strongly affects the degree of exposure of high-titanium slags in sulfuric acid. It was found that high-titanium slag can be used in making pigment titanium dioxide by the sulfuric acid method if the anosovite present is stoichiometric in composition, and if excess titanium dioxide is maintained in a small amount or is completely absent. In smelting titanium slags for the pigment industry, slag with constant chemical composition must be sought for,

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REZNICHENKO, V. A., et al, Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 49-54

where the principal components of the slag (TiO_2, Ti_2O_3, TiO, FeO, MgO, and Al_2O_3) must be entirely present as part of the anosovite without permitting crystallization of rutile.

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USSR

BIYBOSUNOV, I., KARYBEKOV, N.

"Planar Transsonic Flow of Curved Shock Wave"

Moscow, Mekhanika Zhidkosti i Gaza, No 5, Sep-Oct 70, pp 78-83

Abstract: An example is studied of plane-parallel flow which has zones of sub- and supersonic velocities, divided by a shock wave and transition line. The shock wave front approaches the transition line at a right angle, separating a quadrant in the physical plane where the flow velocity is subsonic. In the other three quadrants, the velocity of a particle exceeds the speed of sound, so that the flow cannot be used for the study of local properties of the field of velocities in the classical problem of termination of a shock wave on a transition line in a local supersonic zone. In constructing the shock wave, the authors used the method of perturbations; the desired quantities are expanded into a series with respect to a small parameter.

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USSR

UDC 621.315.592

NAZAROV, A., MAMAYEV, S., (DECEASED), and KARYMASHAKOV, R., A. F. Ioffe Physico-Technical Institute and Turkmenistan Physico-Technical University

"Some Optical Characteristics of Solid Solution 2GaAs-AnSi As_2 Layers"

Ashkhabad, Izvestiya Akademii nauk Turkmenskoy SSR -- Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, No 5, 1972, pp 36-40

Abstract: The purpose of this paper is to examine the coefficient of reflection in 2GaAs-AnSiAs_2 crystals as a function of the wave-length in the 2-15 micron range, at 290° K, and the spectral variation of the absorption factor of the crystals in the extreme region of the characteristic absorption at 83 and 290° K, obtained by the gas-transport reaction method. The electrical measurements showed that all the different samples investigated were of hole-type conductivity and had high hole concentrations. Curves for the spectral variations of the reflection and absorption factors are plotted, and charts are given of the characteristics of various combinations of 2GaAs and $ZnSiAs_2$.

The optical width of the forbidden zone in the 2GaAs-$ZnSiAs_2$ crystals and in the original $ZnSiAs_2$ was also found.

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1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DOUBLE REFRACTION IN CDSNAS SUB2 -U-

AUTHOR-(03)-KARYMSHAKOV, R.K., UKHANOV, YU.I., SHMARTSEV, YU.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 362-5

DATE PUBLISHED--------70,

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SINGLE CRYSTAL PROPERTY, ARSENIDE, TIN COMPOUND, CADMIUM COMPOUND, LIGHT REFRACTION, REFRACTIVE INDEX, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0087 STEP NO--UR/0449/70/004/002/0362/0365

CIRC ACCESSION NO--AP0105173
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105173

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENCE BETWEEN THE REFRACTION COEFFS. OF ORDINARY AND EXTRAORDINARY RAYS, DELTA N, IN A NON ORIENTATED SINGLE CRYSTAL OF CDSNAS SUB2 CAN BE OBTAINED FROM THE STUDY OF DOUBLE REFRACTION. THE RELATIONS FOR CALCN. OF DELTA N ARE GIVEN. DOUBLE REFRACTION IS STUDIED ON PAIRS OF CDSNAS SUB2 PLATES AT 10-300DEGREESK. DELTA N IS CALCD. FROM EXPTL. DATA ON TRANSPARENCY OF THE PLATES IN LINEARLY POLARIZED LIGHT IN THE WAVE LENGTH REGION 4-14 MU. WITH DECREASING TEMP. DELTA N DECREASES; HOWEVER, THE DISPERSION DEPENDENCE IS PERSERVED. THE METHOD IS APPLICABLE FOR ALL CRYSTALS BELONGING TO THE BAR 42M POINT GROUP. FACILITY: LENINGRAD. POLITEKH. INST. IM. KALININA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INFRARED ABSORPTION SPECTRA OF THE CDSNP SUB2-CDSNAS SUB2 SOLID SOLUTION -U-

AUTHOR-(02)-KARYMSHAKOV, R.K., RADUL, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 398-400

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IR ABSORPTION SPECTRUM, SOLID SOLUTION, ABSORPTION EDGE, FORBIDDEN ZONE WIDTH, PHOSPHIDE, ARSENIDE, CADMIUM COMPOUND, TIN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0094 STEP NO--UR/0449/70/004/002/0398/0400

CIRC ACCESSION NO--AP0105180

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 021

CIRC ACCESSION NO--AP0105180

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA (2-15 MU) WERE MEASURED AT 83 AND 300DEGREESK AND THE OTPICAL FORBIDDEN GAP WIDTH, DELTA E SUBG, WAS DETD. FOR ALL MATERIALS STUDIED. AT 83DEGREESK, THE ABSORPTION EDGE SHIFTS TOWARD HIGHER ENERGIES. (DE SUBG-DT) VALUES ARE ALSO REPORTED. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFRARED ABSORPTION IN CDSIAS SUB2 -U-

AUTHOR-(04)-AVERKYEVA, G.K., KARYMSHAKOV, R.K., PROCHUKHAN, V.D., SERGINOV, M.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 591-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--IR ABSORPTION, CADMIUM COMPOUND, SILICON COMPOUND, ARSENIDE, FORBIDDEN ZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0393 STEP NO--UR/0449/70/004/003/0591/0593

CIRC ACCESSION NO--AP0115403

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0116403
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRUM OF CDSIAS SUB2 WITH CHALCOPYRITE STRUCTURE, GROWN FROM A SOLN. OF CDAS, WAS OBTAINED AT ROOM TEMP. AND 0.7-15 MU. THE TRANSMISSION COEFF. EXHIBITED A SHARP INCREASE AT SIMILAR TO 0.8 MU, CORRESPONDING TO THE OPTICAL WIDTH OF THE FORBIDDEN ZONE. THEREAFTER, THE TRANSMISSION COEFF. INCREASED LESS RAPIDLY, REACHING A MAX. OF 48PERCENT AT SIMILAR TO 12 MU. AT 12.8 MU ABSORPTION WAS OBSD. WHICH CAN BE RELATED TO LATTICE VIBRATIONS OR COMPLEXES. MEASUREMENTS OF ABSORPTION COEFFS. IN THE PHOTON RANGE 1.45-1.65 EV WERE MADE TO OBTAIN A MORE ACCURATE DETN. OF THE FORBIDDEN ZONE WIDTH; THE OPTICAL WIDTH OF THE FORBIDDEN ZONE IN THE LARGE ABSORPTION REGION CORRESPONDED TO AN ABSORPTION COEFF. OF 6 TIMES 10 PRIME2 CM PRIME NEGATIVE1. DOUBLE REFRACTION WAS NOTED BUT NOT MEASURED QUANT. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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