

USSR

UDC 621.762.669.71

KOTIYEVA, L. U., FILICHKINA, M. P., and KOCHETKOV, P. G., Moscow Aviation
Technological Institute

"Study of the Effect of the Mineralization Agent on Properties of SAP Products"
Orichonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya,
No 1, 1973, pp 145-149

Abstract: In order to increase the mechanical properties of products made of SAP (sintered aluminum powder), an attempt was made to increase the concentration of α - Al_2O_3 phase in the Al powder by adding to it the mineralization agent AlF_3 . Aluminum powder with AlF_3 was subjected to sintering at 823°C for 3-8 hours and the percentage of oxide phases in it was measured. The obtained results showed that the addition of 3 wt.% AlF_3 to Al powder increased the quantity of oxide phases by 1.5-3%, with predominant granule fractions of $-0.074 + 0.044$ mm after sintering at 823°C . At this temperature AlF_3 reacts directly with $\text{AlO}(\text{OH})$ and $\text{Al}(\text{OH})_3$ by forming α - Al_2O_3 small crystals, which become crystallization centers capable of producing α - Al_2O_3 phase during the recrystallization heating. Reactions of AlF_3 with $\text{AlO}(\text{OH})$ and $\text{Al}(\text{OH})_3$ also produces HF, which reacts directly with γ - Al_2O_3 and transforms $1/2$

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KOTIYEVA, L. U., et al., Investiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 145-149

it into the α - Al_2O_3 phase. Without HF this transformation would be impossible. In the presence of AlF_3 in Al powder, a transformation of $\text{Al}(\text{OH})_3$ into $\text{AlO}(\text{OH})$ takes place at room temperature in hermetically sealed containers, which would be possible only at 583-625°C without the mineralization agent AlF_3 . When samples of Al powder with 3 wt.% AlF_3 were heated at 823°C for 6 hours, the tensile strength of samples was within 23-42 kg/mm², and the relative elongation within 8-15%, compared with 22-40 kg/mm² and 3-7%, respectively, without AlF_3 . The best mechanical properties of SAP samples were obtained with powders containing - 0.074 + 0.044 μm particles. SAP products containing AlF_3 mineralization agent can also be welded.

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USSR

UDC 621.762.669.871

KOTIYEVA, L. U., Moscow, Aviation Technological Institute, Chair of Chemistry

"Influence of Production Technology on Properties of the Material SAP"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya
No 6, 1972, pp 123-127

Abstract: The influence of the production technology on properties of the material SAP was investigated on specimens of 1-1.5 kg briquets (density $2.76 \cdot 10^3 \text{ kg/cm}^3$) produced from nodulized ASP-1 powder dispersed on screens to obtain fractions of different granulometric composition (70, 100, 140, and 200 μm). Tests for ultimate strength and plasticity show that the SAP briquet produced from 70 μm -granulated powder has the best technological properties. Effects of initial oxide phases, dimensions of specimens, and loading, heating, and cooling kinetics on properties of SAP material are discussed. Specimens produced by repeated processing with stepwise load increase (20-25, 40-45, and 60-65 kg/mm^2) and applying intermediate annealing in vacuum at 673°K were most heat-resistant. A load increase of over 100 kg/mm^2 produced a sharp increase of brittleness due to complete scaling of oxide films from grains. Four tables, three bibliographic references.

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Acc. Nr.: AP0046785

Ref. Code: UR 0113

K

USSR

UDC 621.789

KOTKIS, M. A., Candidate of Technical Sciences, Gor'kiy Auto Plant

"Hardening of 50KHG Steel by Strain Aging"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970,
pp 35-36

Translation: A new technology has been developed for production of springs made
of 50KHG steel, hardened by strain aging. The new technology is much simpler,
and the strength of the springs made with use of this method is higher.
(2 tables, 2 illustrations)

1/1

18 57

Reel/Frame
19790089

USSR

UDC 621.372

BATALOV, B. V., KAZENKOV, G. G., KOTKO, A. P., and RUDENKO, A. A.

"Algorithm for Statistical Analysis of Electronic Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collection of Scientific Works on Problems in Miniature Electronics, Moscow Institute of Electronic Engineering) No 9 (Fiz.-mat. seriya), pp 61-67, 1972 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A113)

Translation: An algorithm for statistical analysis of electronic circuits in the algorithm language ALGOL-60, using the TA-1M translator for the M-20 digital computer, is proposed.

1/1

KOTKO, A. P.

Microelectronics

MICROELECTRONICS

DPMS 57333
25 October 1972

Receipts from Russian-language book ordered by S. V. Lukin:
Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House,
Moscow, UDC 621.381.631.396.6-181.5.

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- A -

(I - USSR - P)

This article concerns the problem of constructing integrated internal memory on semiconductor transistors from silicon technology. The article examines methods of optimal division for uniform subdivision of the internal memory structure with randomized and distributed elements. The article gives a comparative analysis of different methods of construction of an internal memory based on a set of random and regular power. The article examines the characteristics of the structure of integrated memory for an internal memory with distributed control. On the basis of the comparative analysis of different types of memory cells cited in the article the best circuit for the cell is selected. The structure and the theoretical circuit is given for the memory subsystem developed for integrated execution. Based on the results of the analysis and the experiment, the basic parameters of the integrated internal memory are evaluated.

The article contains 10 figures and 18 bibliographic references.

DOC 011001.6-001

Allowing for Nonuniformity in the Distribution of Defects in Evaluating the Yield Probability of Suitable Integrated Semiconductor Circuits. Raditskiy, V. A. and Gerasimov, G. S. and Paralov, B. V. in the Collection Mikroelektronika, edited by F. V. Lukin, No 5, P 151, Sovetskoye Radio Publishing House, 1972.

A method is suggested for predicting the yield of suitable circuits by allowing for the nonuniform distribution of defects. It is shown that with increase in the complexity of the circuits and increase in the average number of defects on the circuits that accompany it, the influence of the non-uniformity of the distribution on the percent of yield of suitable circuits also grows.

The article contains 1 figure, 2 tables, and 7 bibliographic references.

DOC 011001.6-001.396.0-1510

Subnanosecond Memory Element on the Basis of the Gunn Effect in Gallium Arsenide. Volkov, V. A. Iravchenko, B. N. Orlik, L. V. A. A. Ekhadurov, V. I. and Shalagin, A. I. in the Collection Mikroelektronika, edited by F. V. Lukin, No 5, P 151, Sovetskoye Radio Publishing House, 1972.

The article examines a subnanosecond memory element on the basis of the Gunn effect in gallium arsenide for use in superoperational memory devices with random sampling during

USSR

UDC 621.396.6-181.5

BATALOV, B. V., KAZENNOV, G. G., KOTKO, A. P., KURBATYEV, F. A., RUDENKO, A. A.

"Evaluating the Uniformity of Parameters of Transistors in Integrated Semiconductor Circuits"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1971, No 1, pp 47-50 (from Radio-tekhnika, No 7, Jul 71, Abstract No 7V271)

Translation: A procedure is developed for quantitative evaluation of the degree of uniformity of the parameters of transistors in integrated semiconductor circuits. The procedure can be used for designing circuits as well as for inspection under production conditions. Taken as the measure of uniformity is the pair correlation coefficient which enables determination of the conditional distributions of parameters.

1/1

SINITSYN, V. A., POPOV, I. A., BORODULIN, G. I., MAL'ISHIN, H. N., KOTKOV,
A. V.

"Experimental Industrial Tests of the MSD-1 Phototachymeter"

Moscow, Geodeziya i Kartografiya, No 11, 1971, pp 30-31.

Abstract: The paper gives basic technical data and the results of experimental industrial tests of the MSD-1 phototachymeter developed by the All-Union Scientific Research Institute of Mining Geomechanics and Surveying for measuring distances in underground surveying jobs. The instrument has a range of action of 1-300 meters with an accuracy of $\pm(2 \text{ mm} + 5 \cdot 10^{-6} D)$. Measurements take 3-3 minutes. The test results show that the instrument is highly accurate and can be used in special geodetic engineering jobs as well as in surveying work. One figure, two tables.

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EQUIPMENT

Measuring, Testing, Calibrating

UDC 528.517

USSR

ZARUBIN, B. I., KORABLEV, D. P., KOTKOV, A. V., CHERNIVCHAN, T. V.

"Experience in the Operational Use of the TD-2 Phototelemeter"

Moscow, Geodeziya i Kartografiya, No 8, 1970, pp 13-19

Abstract: Series production of the TD-2 surveying and geodetic phototelemeter was started in 1969. This instrument differs from the TD-1 phototelemeter only with respect to small design improvements. Experimental specimens of the TD-type phototelemeter have been tested in operation. The results of these tests are generalized and analyzed in the article. The TD-2 phototelemeter is extremely simple in design and is reliable in operation, and can be recommended for measuring initial triangulation sides up to 10-12 km long.

1/2 035 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--PROBLEMS OF IMMUNOLOGICAL REACTIVITY IN MENTAL PATIENTS WITH
TOXOPLASMOSIS -U-
AUTHOR-(04)-MOTOVKINA, N.S., MIKHALEVA, L.V., KOTKOV, F.I., FRAYND, N.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 5, PP 718-721
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNOLOGY, MENTAL DISORDER, ANTIBODY, TEST, PSYCHOSIS,
ENCEPHALITIS, CENTRAL NERVOUS SYSTEM, PARASITIC DISEASE, TOXOPLASMOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1134

STEP NO--UR/0246/70/070/005/0718/0721

CIRC ACCESSION NO--AP0115153

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115153

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONVENED A COMPREHENSIVE STUDY OF IMMUNOLOGICAL CHANGES IN THE ORGANISM OF MENTAL PATIENTS WITH TOXOPLASMOSIS. THE STUDIES WERE RELATED MAINLY WITH THE EXISTENCE OF COMPLETE ANTIBODIES, COMPLEMENT FIXATION TESTS, INCOMPLETE ANTIBODIES IN THE INHIBITIVE REACTIONS OF COMPLEMENT FIXATION AND SENSITIZATION BY A TOXOPLASMOTIC ALLERGEN (INTRACUTANEOUS TESTS). 1504 PATIENTS WERE STUDIED. THE HIGHEST PER CENT OF POSITIVE REACTIONS TO TOXOPLASMOSIS WAS SEEN IN OLIGOPHRENIC PATIENTS (73.0PERCENT) AND IN TRAUMATIC PSYCHOSES (67.0PERCENT); THE LOWEST WAS SEEN IN PATIENTS WITH ENCEPHALITIS (26.3PERCENT). THE TOTAL NUMBER (IN ALL DISEASES) WAS 53.5PERCENT. COMPARING THE RESULTS IN GROUPS OF PATIENTS WITH TOXOPLASMOSIS WITHOUT MENTAL DISORDERS AND WITH DIVERSE MENTAL CHANGES IT WAS DISPLAYED THAT INCOMPLETE ANTIBODIES IN THE SECOND GROUP WERE REGISTERED 4 TIMES MORE FREQUENTLY THAN IN THE FIRST. THIS MAY SPEAK OF A MORE PROFOUND AFFECTION OF THE ORGANISM BY INFECTIONS AND AN INVOLVEMENT INTO THE PATHOLOGICAL PROCESS OF THE CNS. THESE CHANGES IN THE REORGANIZATION OF REACTIVITY ARE INTIMATELY CONNECTED WITH THE DURATION OF THE DISEASE. FACILITY: KAFEDRY PSIKHIATRII, KAFEDRA MIKROBIOLOGII VLADIVOSTOK MEDITSINSKOGO INST. AND TOKSOPLAZMOZNAJA LAB. KRAYEVOY SANEPIDSTANTSII.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ECONOMIC PROBLEMS OF QUALITY CONTROL -U-
AUTHOR--(02)-KOTLIKOV, YA.SH., GLICHEV, A.V.
COUNTRY OF INFO--USSR K
SOURCE--STANDARTY I KACHESTVO, 1970, NR 2, PP 12-14
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--QUALITY CONTROL, INDUSTRIAL R AND D, INDUSTRIAL PRODUCTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/2031 STEP NO--UR/0422/70/000/002/0012/0014
CIRC ACCESSION NO--AP0100596
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100596

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEMS CONSIDERED ARE BASIC
IN THE ECONOMIC ASPECT OF PRODUCT QUALITY CONTROLLED AT ALL STAGES OF
THE CREATION AND USE OF PRODUCTS.

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UNCLASSIFIED

USSR

UDC 535.37

ZALESSKIY, I. YE., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Academy of Sciences Belorussian SSR, SOLOV'YEV, K. N., and SHKIERMAN, S. F., Institute of Physics of the Academy of Sciences Belorussian SSR, Belorussian State University imeni V. I. Lenin, Minsk

"Study of Chlorophyll-Like Molecule Fluorescence Due to Transitions From High Excited Levels"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

Abstract: In the case of chlorophyll-like molecules, transitions from high excited levels are of interest because of the possibility that such states of chlorophyll molecules participate in the photosynthesis process. Quasiline spectral data for tetrabenzoporphin (TBP) show that the lifetime of the S_3 level (first component of the Soret band) is not very short, since the width of the quasilines is about 10 cm^{-1} ; that is, $\tau_3 \sim 10^{-12}$ sec. The great intensity of the Soret band makes it possible to expect in this case a comparatively high yield of short-wave ("blue") fluorescence $S_3 \rightarrow S_0$, and on

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ZALESSKIY, I. YE., et al., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

this basis the authors undertook to search for "blue" fluorescence in TBP and metal complexes thereof. During their study the authors received from Professor M. GOUTERMAN (United States) the manuscript of an article which reported the detection of "blue" Zn-TBP fluorescence, thus agreeing with the authors' data. The present article describes results of a systematic study of "blue" fluorescence in TBP and a number of its metal complexes (zinc, cadmium, copper, vanadium (VO-TBP), palladium) as well as chlorophyll a.

The "blue" fluorescence spectrum of Zn-TBP at room temperature is approximately mirror-symmetric to the Soret band of the absorption spectrum. The excitation spectrum for this fluorescence in the region accessible to measurements coincides with the absorption spectrum. There is no quenching of "blue" fluorescence by heavy atoms. These data indicate that the fluorescence is ($S_2 \rightarrow S_0$)-fluorescence and is not attributable to an impurity. The effect of a solvent and temperature on ($S_2 \rightarrow S_0$)-fluorescence in Zn-TBP

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ZALESSKIY, I. YE., et al., Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

and the absolute quantum yield of Zn-TBP ($S_2 \rightarrow S_0$)-fluorescence were studied. The "blue" fluorescence in the case of the free base TBP is an order weaker. The radiationless transition $S_4 \rightarrow S_1$ is of a cascade character. No "blue" fluorescence was observed in the studied complexes of TBP with transition metals (V, Cu, Pd) or in the case of chlorophyll a.

The authors thank T. F. KACHURA for preparing the tetrabenzoporphin and the metal complexes thereof, M. V. SARZHEVSKAYA for providing the chlorophyll a, and A. T. GRADYUSHKO and M. P. TSVIRKO for valuable advice.

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USSR

UDC 535.51:535.37

ZALESSKIY, I. Ye., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Belorussian Academy of Sciences; SOLOV'YEV, K. N., SHKIRMAN, S. F., Institute of Physics, Minsk

Variation, with Time, of Porphyrin Fluorescence Polarization and the Shifting of Iminohydrogens in the Porphin Ring"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1314-1317

Abstract: The authors discuss experiments they have performed in which they discovered new characteristics of radiation anisotropy which, when studied in detail, may lead to the solution of certain problems in the structure of porphyrin molecules. These experiments investigated the polarized luminescence of porphyrins in frozen vitreous solutions. The principal subject of this paper is the dependence of that polarization on the time in which the excitation light operates at low temperatures. Measurement of the degree of polarization was made with an ordinary spectropolarimetric device with two monochromators. The fluorescence was excited by monochromatic, linearly polarized light, and was observed
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ZALESSKIY, I. Ye., et al., Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1314-1317

at an angle of 40° with respect to the ray of the exciting light. It was found that the fluorescence of etioporphyrin I, tetrakisbenzoporphin, and phthalocyanine in frozen glass was substantially depolarized with time. Curves showing that variation are given, together with tabulated data. It was also found that the reorientation of the molecular oscillators is connected with the shift in iminohydrogens at the center of the porphin ring. Diagrams of possible isomeric forms of the porphin molecule are shown.

2/2

KOTLOBAY A. P.
KOTLOBAY

CHEMICAL INDUSTRY

3

SO: SPK 5728
IA MLL 1773

UMP 66(10)

SYNTHESIS OF ETHYLENE DIAMINE

Article by A. P. Kotlobay, Ye. A. Fedorov, and N. N. Kuznetsov, Chemical Industry, Moscow, U.S.S.R., February 1973, pp 67-70

Production of Ethanol

One industrial method of producing ethanol is the direct hydration of ethylene in the presence of various acids (H₂SO₄, H₃PO₄). According to patent data [1, 2], ethylene is passed through 93-72 percent sulfuric acid at a temperature of 140-160°C and a pressure of 25-11 atm. The increase in yield of alcohol (up to 96 percent) and the formation of small quantities of by-products are advantages of this method over other methods of synthesizing ethanol that are widely used in industry (the oxidation of hydrocarbons and the Fischer-Tropsch process). The shortcomings of the sulfuric acid method are air pollution (hundreds of tons of waste sulfuric acid a day [3]) and significant corrosion of equipment.

Catalysts based on phosphoric acid are widely used in the hydration of ethylene in the gas phase [4], but a trend toward the use of new types of heterogeneous catalysts in this reaction can now be observed. Recently such heterogeneous acidic catalysts as Al₂O₃-SiO₂, Al₂O₃-TiO₂, and NiSO₄ have been proposed and tested [5].

At the Institute of Industrial and Applied Chemistry at Pisa University (in Italy) a study has been made of the hydration of ethylene in a borophosphate catalyst -- BPO with a specific surface of 20 m²/g (Granauer, Cametti, and Triller) [6]. It was established that different methods of producing borophosphate lead to the production of catalysts with different

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UDC 535.373.2

BORISEVICH, N. A., KOTOV, A. A., PAVLOVA, V. T., and TOLSTONOGHEV, G. B.,
Institute of Physics, Academy of Sciences Belorussian SSR

"Triplet-Triplet Electron Energy Transfer in Gas Phase"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 37, No 3, 1973,
pp 508-512

Abstract: The authors made a kinetic study of triplet-triplet electron energy transfer for donor-acceptor pairs of aromatic hydrocarbons and ketones, the lower triplet levels of which have various electron configurations. This phenomenon of T-T energy transfer was used to study the paths of excitation energy degradation in anthraquinone and benzophenone molecules in the gas phase, as well as to obtain sensitized anti-Stokes annihilation retarded fluorescence.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--30JCT70
TITLE--EFFECT OF SOLUTION PH ON THE ADSORPTION OF HYDROGEN AND OXYGEN ON
PLATINUM AND RHODIUM ELECTRODES -U-
AUTHOR--(02)-PETRIY, O.A., KOTLOV, YU.G. K
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(3), 404-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, HYDROGEN, OXYGEN, PLATINUM ELECTRODE, RHODIUM,
SULFATE, CHLORIDE, BROMIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1144 STEP NO--UR/0364/70/005/003/0404/0407
CIRC ACCESSION NO--AP0121703
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121703

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF PH ON H AND O ADSORPTION ON ELECTRODES OF PLATINIZED PT IN SOLNS. IN NA SUB2 SO SUB4 PLUS H SUB2 HO SUB4 (PH 1.60-3.74), N KCL PLUS HCL (PH 1.20-3.34), N KRB PLUS HBR (PH 1.15-3.15), AS WELL AS OF RHODIUMIZED RH IN N NA SUB2 SO SUB4 PLUS H SUB2 SO SUB4 (PH 1.67-3.74) SOLNS. WAS STUDIED BY THE CHARGING CURVE METHOD AND BY CALCG. THE RELATION BETWEEN ADSORBED H AND THE POTENTIAL FOR DIFFERENT PH VALUES. THE EFFECT OF PH ON H ADSORPTION WAS DEPENDENT ON THE POTENTIAL, TYPE OF METAL, AND SOLN. COMPN. THIS DEPENDENCE INCREASED FOR THE PT ELECTRODE IN THE ORDER SO SUB4 PRIME2 NEGATIVE SMALLER THAN CL PRIME NEGATIVE SMALLER THAN BR PRIME NEGATIVE. THE EFFECT OF PH WAS MORE DISTINCT FOR THE RH ELECTRODE.
FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

172	011	UNCLASSIFIED	PROCESSING DATE--20NOV70
TITLE--AUTOMATIC RECORDING OF BREAKDOWN DURING THE IONIZATION AGING OF POLYMER FILMS -U-			
AUTHOR--(04)--DOMKIN, V.S., KOTLOV, YU.V., VALYASHOV, V.V., VARENTSOVA, N.V.			
COUNTRY OF INFO--USSR			
SOURCE--ZAVCC. LAB. 1970, 36(5), 566-7			
DATE PUBLISHED-----70			
SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT			
TOPIC TAGS--MATERIAL TESTING EQUIPMENT, IONIZATION, PLASTIC FILM, ELECTRODE POTENTIAL, AUTOMATIC EQUIPMENT			
CONTROL MARKING--NO RESTRICTIONS			
DOCUMENT CLASS--UNCLASSIFIED		STEP NO--UR/00322/70/006/005/0566/0567	
PROXY REEL/FRAME--3004/1972			
CIRC ACCESSION NO--AP0132233		UNCLASSIFIED	

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132233

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TESTED FILM IS CLAMPED TO A GROUND METAL PLATE AND 30-35 ELECTRODES ARE CONTACTED WITH ITS SURFACE. THE ELEC. POTENTIAL OF THE ELECTRODES IS INCREASED AT THE SAME RATE UNTIL THE FILM UNDER THE ELECTRODE(S) BECOMES COND. (IONIZED). AN APP. IS DESCRIBED AND SHOWN IN A DIAGRAM WHICH RECORDS THE VOLTAGE AT WHICH THE ELEC. FILM BREAKDOWN TAKES PLACE UNDER EACH OF THE ELECTRODES. FACILITY: VLADIMIR. NAUCH.-ISSLED. INST. SIN. SMOL, VLADIMIR, USSR.

UNCLASSIFIED

1/3 015 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--GLACIERS OF THE USSR AND THE STUDY OF THE BUDGET OF THEIR MASS -U-
AUTHOR--GROSVOLD, M.G., KOTLYAKOV, V.M.
COUNTRY OF INFO--USSR *K*
SOURCE--GEOFIZICHESKIY BYULLETEN', MOSCOW, 1970, NR 21, PP 3-17
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GLACIER, WATER, SOLAR ACTIVITY, HEAT BALANCE, WATER BALANCE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1282 STEP NO--UR/0000/70/000/021/0003/0017
CIRC ACCESSION NO--A0103165
UNCLASSIFIED

2/3 015

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0103165

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE 4 MAJOR GLACIER REGIONS IN THE USSR: THE ATLANTIC ARCTIC, ATLANTIC EURASIAN, EAST SIBERIAN AND PACIFIC ASIAN, WHICH CAN BE DEVIDED INTO 19 SEPARATE GLACIER AREAS. THE TOTAL AREA OF THE GLACIERS IN THE COUNTRY AMOUNTS TO 81 900 KM², AND THE VOLUME OF WATER STORED IN THEM, TO 13 750 KM³. THE MAIN CHARACTERISTIC FEATURES OF GLACIER REGIME, SUCH AS THE ELEVATION OF THE EQUILIBRIUM LINE, THE VALUE OF THE TOTAL ACCUMULATION AT THE EQUILIBRIUM LINE, THE VERTICAL GRADIENTS OF THE NET BALANCE, THE "GLACIER RATIOS" ETC., ARE ESTIMATED FOR THE MAJORITY OF THE GLACIER AREAS. THE DATA ON MASS BALANCE OF THE GLACIERS IN THE POLAR URALS AND TIEN SHAN ARE TABULATED AND COMPARED, WHICH WERE OBTAINED THROUGH THE DIRECT MEASUREMENT OVER THE LAST DECADE. IT HAS BEEN FOUND THAT THE GLACIER BALANCE CHANGES IN BOTH AREAS ARE NONSYNCHRONOUS. A COMPARISON OF THE VARIATIONS IN MASS BALANCES OF THE IGAN GLACIER (THE POLAR URALS) AND THE GREAT ALETSCHE GLETSCHER (THE SWISS ALPS), OVER THE PERIOD OF SEVERAL DECADES SUGGESTS THE CYCLIC TREND OF THE VARIATIONS IN BOTH REGIONS (WITH A WAVE LENGTH OF ABOUT 22 YEARS) AND THE DIRECT OPPOSITION IN THEIR PHASE.

UNCLASSIFIED

3/3 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103165

ABSTRACT/EXTRACT--THE ANALOGY OF 22 YEAR CYCLES OF THE BALANCE VARIATIONS WITH THE CYCLIC FLUCTUATIONS OF THE SAME WAVE LENGTH IN SOLAR ACTIVITY SEEMS TO BE QUITE EVIDENT, WHEREAS THE ATMOSPHERIC CIRCULATION APPEARS TO BE A MAIN INTERMEDIATE VARIABLE IN THE CHAIN "SUN GLACIERS" RESPONSIBLE FOR THE "CONTRA PHASE" RELATIONSHIP IN GLACIER VARIATIONS OF CERTAIN AREAS. IN CONCLUSION, SOME DATA ON THE PRESENT CHANGES IN GLACIER REGIME ARE GIVEN, AS WELL AS A GENERAL INFORMATION ON GLACIOLOGICAL STUDIES CARRIED ON IN THE USSR WITHIN THE FRAMEWORK OF THE IHD PROGRAMS. THE LATTER COVER THE COMPILING OF THE SOVIET UNION INVENTORY OF PERENNIAL SNOW AND ICE MASSES, THE CONTINUOUS MEASUREMENT OF GLACIER VARIATIONS, AND THE COMBINED RESEARCHES ON HEAT, MASS AND WATER BALANCES AT SELECTED MOUNTAIN GLACIER BASINS.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY STUDIED IN THE ZIRCONIUM
DIOXIDE, YTTRIUM SESQUIOXIDE AND TANTALUM PENTOXIDE SYSTEM -U-
AUTHOR--(04)-KOTLYAR, A.G., NEUYMIN, A.O., PALGUYEV, S.F., STREKALOVSKIY,
V.N.
COUNTRY OF INFO--USSR K
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 327-31
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND,
TANTALUM COMPOUND, OXIDE, MOLECULAR STRUCTURE, SOLID SOLUTION, CRYSTAL
LATTICE STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0563 STEP NO--UR/0363/70/006/002/0327/0331
CIRC ACCESSION NO--AP0105548
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE AND ELEC. COND. OF A SERIES OF OXIDE MIXTS. IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM WERE STUDIED AT THE CONST. RATIO OF ZRO SUB2: Y SUB2 O SUB3 EQUALS 90:10, AS WELL AS OF MIXTS. 0.9 (0.9ZRO SUB2 PLUS 0.1Y SUB2 O SUB3) PLUS 0.1NB SUB2 O SUB5 AND 0.9 (0.9ZRO SUB2 PLUS 0.1Y SUB2 O SUB3) PLUS 0.1V SUB2 O SUB5. SOLID SOLNS. BASED ON ZRO SUB2 FORM IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM. THE STRUCTURE, CONCN. OF O VACANCIES IN THE CRYST. LATTICE, AND ELEC. COND. VARY DEPENDING ON THE RATIO OF THE AMTS, OF Y SUB2 O SUB3 AND TA SUB2 O SUB5 PRESENT IN THE SOLID SOLNS. THE ELEC. COND. OF THE INVESTIGATED SAMPLES OF THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5, ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS NB SUB2 O SUB5, AND ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS V SUB2 O SUB5 SYSTEMS AT A SMALLER THAN OR EQUAL TO 1400DEGREES AND IN O AND AIR IS PURELY IONIC.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY IN ZIRCONIUM DIOXIDE YTTRIUM
OXIDE COPPER (I) OXIDE, ZIRCONIUM DIOXIDE YTTRIUM OXIDE BISMUTH OXIDE,
AUTHOR--(04)-KOTLYAR, A.G., NEUYMIN, A.D., PALGUYEV, S.F., STREKALOVSKIY,
V.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 532-6
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND,
COPPER OXIDE, BISMUTH OXIDE, NICKEL, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1825

STEP NO--UR/0363/70/006/003/0532/0536

CIRC ACCESSION NO--AP0118789

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118789

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

ABSTRACT. THE SOLUBILITIES OF THE OXIDES OF CU AND BI, AS WELL AS OF METALLIC NI IN A ZRO SUB2 PLUS Y SUB2 O SUB3 MIXT. AT THE RATIO ZRO SUB2:Y SUB2 O SUB3 EQUALS 90:10 ARE VERY INSIGNIFICANT. INTRODUCTION OF CU SUB2 O INTO THE ZRO SUB2-Y SUB2 O SUB3 MIXT. IN AMTS. GREATER THAN 5 MOL. PERCENT IS ACCOMPANIED BY THE APPEARANCE OF ELECTRONIC CONDUCTION CAUSED BY THE COND. OF CU OXIDES ARRANGED ALONG THE BOUNDARIES OF THE ZRO SUB2 PLUS Y SUB2 O SUB3 GRAINS IN THE FORM OF THIN FILMS AND FORMING THROUGH BRIDGES AT A RELATIVELY SMALL CONTENT OF THE ADDN. IN (ZRO SUB2 PLUS Y SUB2 O SUB3) PLUS NI MIXTS., THE ELECTRONIC COMPONENT OF THE COND. ENERGIES ONLY AT GREATER THAN 40 WT. PERCENT NI. THE ELEC. COND. OF THE 2 PHASE MIXTS. (SOLID SOLN. OF ZRO SUB2 PLUS Y SUB2 O SUB3 AND NI) THEREBY DEPENDS STRONGLY ON THE FREQUENCY OF THE ELEC. CURRENT THROUGH THE SAMPLE. FACILITY: INST. ELEKTROKHM., IRKUTSK, USSR.

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--VARIATION METHOD FOR CONSTRUCTING TRANSPORT EQUATIONS IN
DISSIPATIVE SYSTEMS WITH ARBITRARY BOUNDARY CONDITIONS -U-
AUTHOR-(03)-GESKIN, E.S., GOLDFARB, E.M., KOTLYAR, B.D.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 543-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMAL CONDUCTIVITY, THERMAL DIFFUSION, THERMAL CONVECTION,
VISCOUS FLOW, TRANSPORT EQUATION, VARIATIONAL METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0389 STEP NO--UK/0076/70/044/002/0543/0544
CIRC ACCESSION NO--AP0111591
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111581

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ON THE BASIS OF THE VARIATIONAL PRINCIPLE, EQUATIONS WERE OBTAINED FOR CORRELATING THERMAL COND. AND DIFFUSION ACCOUNTING FOR CONVECTIVE HEAT FLOW, SOURCES AND CROSSOVER PHENOMENA, AS WELL AS FLOW OF VISCOUS LIQUID. FACILITY: UKR. GOS. PROEKT. INST. METALLURGAVTOMAT., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
 TITLE--FINE STRUCTURE AND PROPERTIES OF DEFORMED AND ANNEALED TUNGSTEN
 SINGLE CRYSTALS -U-
 AUTHOR-(05)-TIRASPOLSKIY, V.I., KOTLVAR, A.A., GRODSKIY, E.A., MIRONOVA,
 O.YA., RATNER, L.A.
 COUNTRY OF INFO--USSR
 SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 175-9
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--TUNGSTEN, METAL SINGLE CRYSTAL, Z RAY DIFFRACTION, ZONE
 MELTING, METAL DEFORMATION, WARM ROLLING, MICROHARDNESS, RESISTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--1988/0700

STEP NO--UR/0126/70/029/001/0175/0179

CIRC ACCESSION NO--AP0105676

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL CHANGES DURING ROLLING AND SUBSEQUENT ANNEALING OF W SINGLE CRYSTALS WERE STUDIED BY X RAY DIFFRACTION IN COMBINATION WITH MICROHARDNESS MEASUREMENTS, AS WELL AS BY ELEC. RESISTIVITY MEASUREMENTS AT LIQ. N TEMP. INVESTIGATED WERE W SINGLE CRYSTALS PREPD. BY ELECTRON ARC ZONE MELTING AND CONTG. A HIGH CONC. (0.05PERCENT) OF INTERSTITIAL IMPURITIES, ESP. C. PRIOR TO DEFORMATION, THE SAMPLES WERE ANNEALED AT 1500DEGREES FOR 5 HR TO REMOVE CASTING STRESSES. AFTER THIS THEY WERE ROLLED AT 200DEGREES (WARM ROLLING) BY 5, 8, 12, 16, 25, 27, OR 30PERCENT. THE PLANE AND THE DIRECTION OF ROLLING WERE CHOSEN ARBITRARILY, AND IN THE GIVEN CASE CORRESPONDED TO APPROX. (123) (110). SAMPLES DEFORMED BY 12-30PERCENT WERE THEN ANNEALED SUCCESSIVELY AT 900, 1200, 1500, 1800, AND 2400DEGREES FOR 1 HR. AT EACH STAGE OF THE TREATMENT, THE SUBSTRUCTURE OF W WAS INVESTIGATED BY X RAY DIFFRACTION (SCHULTZ METHOD), AND THE MICROHARDNESS AND ELEC. RESISTIVITY WERE MEASURED AT LIQ. N TEMP. CERTAIN PROPOSALS ARE MADE AS TO THE NATURE OF THE PROCESSES GOING ON IN W SINGLE CRYSTALS DURING COLD DEFORMATION TO 30PERCENT AND STEPWISE ANNEALING. WARM ROLLING TO 30PERCENT PRODUCES IN W SINGLE CRYSTALS A SUPERFRAGMENTED OR A FRAGMENTED SUBSTRUCTURE. STEPWISE ANNEALING OF SINGLE CRYSTALS WITH SUPERFRAGMENTED SUBSTRUCTURE PRODUCES IN THEM RECOVERY AND POLYGONIZATION, WHEREAS FOR FRAGMENTED SUBSTRUCTURE IT PRODUCES ALSO SPOT RECRYSTN., LEADING TO COMPLETE WEAKENING AND THE FORMATION OF A PERFECT STRUCTURE.

UNCLASSIFIED

USSR

UDC 669.79:620.153

TIRASPOL'SKIY, V. I., KOTLYAR, A. A., GRODSKIY, E. A., MIRONOVA, S. YA.,
RATNER, L. A., and SHPARO, N. B.

"Thin Structure and Properties of Deformed and Annealed Tungsten Single Crystals"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1,
Jan 70, pp 175-179

Abstract: Structural changes occurring in tungsten single crystals during hot rolling and subsequent annealing were investigated, using the methods of X-ray diffraction microscopy and by measuring the microhardness and residual electrical resistance at the liquid nitrogen temperature (78°K). The experimental technique and procedure for producing tungsten single crystals are described. X-ray photographs are presented of single crystal structure before and after rolling, and also of samples strained at 30% and annealed at various temperatures (1100 to 2400°). They show that the dislocation density inside the subgrains increases with strain, and at $\epsilon = 25\%$ the subgrain boundaries are no longer discernible. This state is conditionally characterized as prefragmentary. At $\epsilon = 27\%$ a qualitatively new fragmentary state occurs. The substructure and properties of deformed (up to 30%) tungsten single crystals after annealing at various temperatures are studied.

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USSR

TIRASPOL'SKIY, V. I., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 175-179

The variation of the residual electrical resistance and microhardness of samples deformed at 25 and 30% and annealed at 900° are presented in graphs and analysed. The results show that hot rolling with 30% strain produces a prefragmentary or fragmentary substructure, depending on strain. The step-by-step annealing of single crystals with a prefragmentary substructure induces only relaxation and polygonalization. In the case of a fragmentary substructure it also induces recrystallization, which leads to a total softening and a perfect structure. Orig. art. has: 5 figures.

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- 54 -

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
 TITLE--ELECTRICAL ACTIVITY OF THE RETICULAR SYSTEM IN THE PROCESS OF FOOD
 PROCURING CONDITIONING IN RABBITS -U-
 AUTHOR--(02)-KOTYLAR, B.I., ZUBOVA, O.B.
 COUNTRY OF INFO--USSR *R*
 SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP
 485-490
 DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
 SCIENCES
 TOPIC TAGS--CONDITIONED REFLEX, ELECTROPHYSIOLOGY, BRAIN, EXPERIMENTAL
 PSYCHOLOGY, ELECTROENCEPHALOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1997/1930

STEP NO--UR/0247/70/020/001/0485/0490

CIRC ACCESSION NO--AP0120576

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EEG CHANGES DURING ORIENTING AND
CONDITIONED FOOD PROCURING REACTIONS WERE STUDIED IN TEN UNRESTRAINED
RABBITS WITH ELECTRODES CHRONICALLY IMPLANTED IN THE STRUCTURES OF THE
RETICULAR SYSTEM: MEDIAL AND LATERAL PARTS OF THE MID BRAIN RETICULAR
FORMATION, THE RETICULAR NUCLEUS OF THE PONS VAROLII AND THE NON
SPECIFIC THALAMIC NUCLEI. IT HAS BEEN SHOWN THAT THE ORIENTING
INVESTIGATING REACTION IS ACCOMPANIED BY A 6 TO 8 C-S SYNCHRONIZED
RHYTHM WHICH REACHES MAXIMUM FREQUENCY (8 C-S) DURING THE INVESTIGATING
BEHAVIOUR OF THE ANIMAL. IT REACHES 10 C-S IN CONDITIONED ACTIVITY,
WHICH IS ATTRIBUTED TO THE INVOLVEMENT OF A GREATER NUMBER OF COMPONENTS
OF AFFERENT SYNTHESIS. AT THE STAGE OF CONDITIONED REFLEX
CONCENTRATION, THERE IS A TENDENCY TOWARDS LOCALIZATION OF EEG CHANGES IN
THE NON SPECIFIC THALAMUS. FACILITY: CHAIR OF PHYSIOLOGY OF
HIGHER NERVOUS ACTIVITY, LOMONOSOV UNIVERSITY, MOSCOW.

UNCLASSIFIED

USSR

UDC 612.822.3+612.821.6

KOTLYAR, B. I., ZUBOVA, O. B., TIMOFEYEVA, N. O., and KRYUCHKOVA, N. A.,
Chair of the Physiology of Higher Nervous Activity, Moscow State University
imeni M. V. Lomonosov

"Electrophysiological Analysis of Limbic-Reticular Interaction in the Orienting
Reflex"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, No 4, Vol 22,
Jul/Aug 72, pp 828-836

Abstract: Changes in the frequency of synchronized oscillations during extinc-
tion of the EEG component of the orienting reaction to acoustic stimuli were
studied in rabbits with electrodes implanted in various areas of the brain.
The most common development in the reticular formation of the brain stem (73%
of all cases) was an immediate fall in the frequency of these oscillations,
followed by an undulating extinction of the changes (type II reaction). The
simultaneous changes in nonspecific thalamic and limbic nuclei and in the dorsal
hippocampus were more variable. However, the most characteristic development
(43.5%) was an initial gradual rise with a subsequent diminution in the fre-
quency of the synchronized rhythm (type I reaction). Intramuscular chlorpro-
mazine blocked primarily the type II reaction in the brain stem reticular forma-
tion. It is inferred that the first stage of the orienting reaction is
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KOTLYAR, B. I., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No 4, Jul/Aug 72, pp 828-836

associated with activation of the reticular formation in the brain stem, while the second stage in the analysis of the significance of the signal is based on recruitment of the activating mechanisms of the limbic-thalamic system.

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USSR

UDC 632.95

YEVREYEV, V. N., KOTLYAR, G. A., KLINOVA, L. K., MIZYUKOVA, I. G., and
PETRUN'KIN, V. Ye., All-Union Institute of Hygiene and Toxicology of Pesticides,
Polymers, and Plastics

"A Method of Obtaining Trivalent Cobalt Compounds with Diethanolamine"

USSR Author's Certificate No 356322 published 23 Jan 73 (from HZh-Khimiya, No 22,
25 Nov 73, Abstract No 22N569 by T. Ya. Ogibina)

Translation: Compounds with the formula $\text{Co}[\text{NH}(\text{C}_2\text{H}_4\text{O})_2\text{NH}(\text{C}_2\text{H}_4\text{O}) \cdot (\text{C}_2\text{H}_4\text{OH})]$ (I)
and active as pesticides are obtained by splitting (with an alkaline agent)
binuclear complexes containing bi- and trivalent Co in the ratio of 1:1 like
 $\text{Co}_2\text{NH}(\text{C}_2\text{H}_4\text{OH})_2[\text{NH}(\text{C}_2\text{H}_4\text{O})_2]_2\text{X}$ (II) or $\text{Co}_2[\text{NH}(\text{C}_2\text{H}_4\text{O})_2]_2\text{X}$ (III) (X = Cl). Example.
10 ml of water and 0.1 mole of an NaOH solution in 20 ml of water are added to
0.01 mole of II hydroxide. The mixture is filtered and the filtrate evaporated
over CaCl_2 and 10 days later I, $\text{C}_8\text{H}_{18}\text{N}_2\text{O}_4\text{Co} \cdot 9\text{H}_2\text{O}$ is isolated, yield 60%. I is
obtained with a yield of 72% by splitting $\text{III} \cdot 4\text{H}_2\text{O}$ under the same conditions.

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USSR

UDC: 621.372.42.029.64

KOPLYAR, M. Ya.

K
"Investigation of Conditions of Permanent Standby and Power Summation of Tube Type SHF Self-Oscillators"

Tr. Novosib. elektrotekh. in-ta (Works of the Novosibirsk Electrical Engineering Institute), 1970, vyp. 2, kn. 2, pp 177-187 (from RZh-Radiotekhnika, No 6, Jun. 70, Abstract No 6D302)

[No abstract]

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USSR

UDC 546.185

LAZUKINA, L. A., KOTLYAR, N. G., KUKHAR', V. P., and SOLODUSENKOV, Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Phosphazo-1,3,5-Triazines. VI. Phosphorus-Containing Compounds Based on 2,4-Diamino-6-Halomethyl-1,3,5-Triazines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,386-2,389

Abstract: The synthesis of phosphorus-containing compounds based on 2,4-diamino-6-haloalkyl-1,3,5-triazines is of interest in connection with study of the physiological activity of this group of compounds. Several different approaches to the synthesis were tried. In particular, the attempt to obtain a phosphoran from a phosphonium salt by the action of sodium methoxide in methanol, was unsuccessful. Sixteen triazines were synthesized.

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Vysk. Ucheb. Zased., Pis. 1970, 13(1), 24-8 (Russ.) The x-ray absorption K-spectra (7700-40 eV) of Co_2O_3 , CoB (m. 1480), Co_2B (m. 1280), Co_3B (m. 1125°), and pure Co were measured and compared with magnetic properties of the compds. The [110] plane of the quartz single crystal (curvature diam. 900 mm) was used as an analyzer. The resoln. was ~14,000; the Ni K_{α} and Ni K_{β} lines were used as stds. for the energy scale. With increasing content of B in Co borides, a redistribution of the valence-active electrons between the Co-Co, Co-B, and B-B bonds occurs, which results mainly in an increase of strength of the B-B bonds. With increasing no. of B atoms in the borides, absorptivity of the initial absorption region shows practically a linear decrease; it indicates a considerable absorption ability of the 3d level of Co as related to the valence-active p electrons of the B atom. The intensity decrease is ended by appearance of diamagnetism for CoB , where the complete spin satn. and filling of vacancies in the 3d level is supposed. The steepest concn. dependence of the intensity of the initial absorption region is related to the transitions of B sp electrons, preferentially, into the region of Co 3d states. Vaclav Sara -

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USSR

UDC 581.1:072+581.116

KOTLYAR, V. Z., LYUBINS'KIY, M. A., and KIRNOS, P. S., Institute of Plant Physiology, Academy of Sciences Ukr. SSR

"The Origin of Transpiration Water and Pathways of Heavy Water (D₂O) Movement in Leaf Tissues"

Kiev, Ukrains'kiy Botanicheskiy Zhurnal, Vol 17, No 6, Nov/Dec 70, pp 776-778

Abstract: Water enriched with D₂O was introduced through the roots into horse bean (*Vicia faba*), red pepper (*Capiscum annum*), and common cucumber (*Cucumis sativus*) plants. Within definite time intervals, the content of deuterium was determined in the transpiration water from the upper and lower sides of leaves, water of the epidermis of the upper and lower sides of leaves, and water of the mesophyll adjacent to the epidermis. The deuterium content in transpiration water 23-30 hrs after immersion of the roots into labeled water was higher as a rule than that in water of leaf tissues. This indicated that the water eliminated by transpiration moved chiefly through the extracellular free space of leaf tissue outside the protoplasts.

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Acc. APPROVED FOR RELEASE: 08/09/2001. Abstracting Service: CHEMICAL ABST. U.S. Pat. & Trademark Office. Ref. Code: CIA-RDP86-00513R002201520007-2

- 116195h X-ray absorption spectra of cobalt in ferromagnetic borides. Zhuravskii, E. A.; Shashkina, T. B.; Kotlyar, V. Z.

AP9053088

KOTLYAREV

I. L.

UR 0289

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PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 148-151

19

V. G. Torgov, V. N. Andrievsky, E. N. Gilbert,
I. L. Kotlyarevsky, V. A. Mikhailov, A. V. Nikolaev,
V. A. Pronin, D. D. Trozenka

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25

THE EXTRACTION OF Pd AND Pt (IV) FROM NITRIC, HYDROCHLORIC
AND SULPHURIC ACID SOLUTIONS BY ORGANIC SULFIDES

The extraction of tracer amounts of Pd and Pt (IV) from nitric, hydrochloric and sulphuric acid solutions by 0.5 M solution of organic sulfides (R_2S where $R=C_6H_5-C_6H_4$, C_6H_5 and thiophane) in benzene has been studied. The dialkylsulfide extraction can be used in separation Pd from Pt (IV) from nitric and hydrochloric acid solutions and for simultaneous extraction Pd and Pt from sulphuric acid solutions.

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1847

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AA0040631 KOTLYAREVSKAYA 0492 V.N. 3-76

Soviet Inventions Illustrated, Section I Chemical, Derwent,

233657 MERCURATED POLYSTYRENE CATALYST used in preparation of polymerisable vinyl carboxylates ensures less toxicity of the process improved catalyst life and economy of production and also renders the process continuous. The catalyst is prepared by soaking 15.6g of polystyrene in 174.6g of nitrobenzene overnight at room temp. A further 40g. of nitrobenzene are then added and the mixt. heated to 120°C for 1½-2hrs followed by the addition of 52.5g mercuric acetate and 9 ml. acetic acid. The mixture is heated for a further 6-7 hrs. at 120°C with stirring. The product is washed with methylated spirit and acetone and dried at 60°C. The catalyst is used in amount of 5% wt. of the fatty or aromatic acid used. 29.7.67. as 1175988/23-4, DAVANKOV, A.B. et al. Lu. G. Mamedaliev Petrochemical Inst. Sumgait Filial. (30.6.69) Bul. 3/24.12.69. Class 12o, 21, 12o, 12. Int. Cl. C 07c. C 07c.

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40 7

19750191

AA0040631

AUTHORS: Davankov, A. B.; Renard, T. L.; Pishnamazzade, B.-A. F.;
Shabanova, D. A.; and Kotlyarevskaya, V. N.

Sumgaytskiy Filial Instituta Neftekhimicheskikh Protseessov
imeni Yu. G. Mamedaliyeva

19750192

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USSR

UDC 542.91.5+7.752

KOTLYAREVSKIY, I. L., MAL'KOVA, L. A., Institute of Chemical Kinetics and Combustion of the Siberian Department of the USSR Academy of Sciences

"Synthesis of Analogs of the Diethylamide of Lysergic Acid"

Moscow, Izvestiya Akademii Nauk SSSR - Seriya Khimicheskaya, No 11, 1972, pp 2613-2614

Abstract: A study was made to obtain new medicines and discover the relation of the structure of LSD-25 (the diethylamide of lysergic acids, I) to its physiological activity by synthesizing some analogs of I -- a series of N-methyl-N[β -(β -indolyl)ethyl]glycine. Analysis of the paramagnetic resonance spectra was used to determine the structure of the analogs. The experimental procedure and results are presented for the synthesis of the morpholide of monobromacetic acid and the morpholide of N-methyl-N[β -(β -indolyl)ethyl]glycine.

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USSR

UDC 542.91:541.69:547.352:547.556.9

SHISHAKOVA, T. G., BARDANOVA, M. I., KONYASHINA, N. V., KONTSEVICH, I. I.,
PERSHIN, G. N., and MIKERINA, A. L., Institute of Chemical Kinetics and Com-
bustion, Siberian Branch Acad. Sci. USSR, and Chemical-Pharmaceutical In-
stitute, Acad. Med. Sci. USSR

"Synthesis and Study of the Antimicrobial Activity of the Amino Derivatives of
4-Hydroxy-4'-ethynylazobenzene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72,
pp 978-980

Abstract: 20 g of 4-Hydroxy-4'-acetylazobenzene (I) was refluxed for 8 hrs
with 11.6 g K_2CO_3 , 150 ml acetone, and 19.2 g allyl bromide, cooled, and
poured into water. Solid material was obtained and after recrystallization
from alcohol yielded 17.9 g 4-allyloxy-4'-acetylazobenzene (II), m. p. 190-
192. (II) was hydrogenated over Pd/CaCO₃ to yield 4-propoxy-4'-acetylaze-
benzene (III), m.p. 117-120°. Chlorination of (III) followed by dehydrochlori-
nation yields 4-propoxy-4'-ethynylazobenzene, m.p. 97-98°. Mannich conden-
sation of that product yields 4-propoxy-4'-(piperidinopropyl-1"-yl-1")-azo-
benzene, m.p. 188-190°. However, the free hydroxy analogue -- 4-hydroxy-4'-
ethynylazobenzene reacts only with difficulty via the Mannich condensation

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USSR

SHISEMAKOVA, T. G., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 978-980

giving low yields of 4-hydroxy-4'-(morpholinopropyn-1"-yl-1")-azobenzene (VI), m.p. 250-253° and 4-hydroxy-4'-(piperidinopropyn-1"-yl-1")-azobenzene (VII), m.p. 177-178°. (VII) showed a rather high antitubercular activity, surpassing (VI). Several analogues of (VII) were bioassayed, but none showed any activity. It was concluded that in order to have biological activity a compound must have a free hydroxyl group and a single triple bond.

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STRUCTURE OF PRODUCTS OF P,P PRIME, DIALKOXYDIPHENYLALKANE
ACETYLATION -U-
AUTHOR-(04)-ZANINA, A.S., ALT, L.YA., SHERGINA, S.I., KOTLVAREVSKIY, I.L.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 459-61
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NMR SPECTRUM, MOLECULAR STRUCTURE, ALKOXIDE, BENZENE
DERIVATIVE, CCYCLOALKANE HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0843

STEP NO--UR/0062/70/000/002/0459/0461

CIRC ACCESSION NO--AP0119747

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 009

CIRC ACCESSION NO--AP0119747

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

ABSTRACT. ACETYLATION OF (1R,3C SUB6 H SUB4) SUB2 Z (1) WITH ACCL,ALCL SUB3 RESULTED IN DEALKYLATION OF THE STARTING MATERIAL AND ENTRY OF THE AC GROUP IN THE POSITION ORTHO TO THE HO. ALKYLATION OF I WITH ALKYL HALIDES GAVE DIALKOXY COMPOS. AS WELL AS HYDROXY,ALKOXY ANALOGS. THE CONCLUSIONS WERE MADE FROM AN NMR STUDY OF THE PRODUCTS OF SUCH REACTIONS IN WHICH Z EQUALS CH SUB2 CH SUB2 OR CME SUB2, WHILE R WAS H, ME, ET, OR PR. NMR SPECTRAL CURVES FOR SUCH PRODUCTS AS ME SUB2 C(C SUB6 H SUB3 AC(OH),3,4)(C SUB6 H SUB3 AC(OME),3,4) AND ME SUB2 C(C SUB6 H SUB3 AC(OME),3,4) SUB2 WERE SHOWN.

FACILITY: INST. KHIM. KINET. GORENIVA, NOVO-SIBIRSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
 TITLE--REACTIONS OF 4,4PRIME DIETHYNYLOIPHENYL SULFIDE -U-
 AUTHOR-(02)-ZANINA, A.S., KOTLYAREVSKIY, I.L.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD, NAUK SSSR, SER. KHIM. 1970, (2), 466-8
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ORGANIC SULFUR COMPOUND, PHOSPHORUS CHLORIDE, SULFIDE,
 CYCLOHEXANONE, DIETHYLAMINE, CHEMICAL REACTION, ETHYL ETHER, AMINE,
 MORPHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1997/0852

STEP NO--UR/0062/70/000/002/0466/0468

CIRC ACCESSION NO--AP0119756
 UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119756

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING (RHO-ACC SUB6 H SUB4) SUB2 S WITH PCL SUB5 IN C SUB6 H SUB6 1 HR GAVE THE MIXED CHLORIDES, WHICH IN ET SUB2 O-C SUB6 H SUB6 WERE ADDED TO NANH SUB2 IN LIQ. NH SUB3, AND HELD 1 HR. TO YIELD 45.4PERCENT (RHO-HC TRIPLE BOND CC SUB6 H SUB4) SUB2 S (I), M. 117-20DEGREES. STIRRING 2 G I IN ET SUB2 O WITH 2.5 G POWD. KOH 1 HR, AND TREATING THE MIXT. WITH 0.9 G ME SUB2 CO 4 HR GAVE 90.7PERCENT (RHO-HOCME SUB2 C TRIPLE BOND CC SUB6 H SUB4) SUB2 S, M. 163-5DEGREES; SIMILARLY CYCLOHEXAMONE GAVE THE BIS-(1, HYDROXYCYCLOHEXYL) ANALOG, M. 170-3DEGREES. I HEATED WITH PARAFORMALDEHYDE AND ET SUB2 NH IN THE PRESENCE OF CUCL SUB2 IN DIOXANE-ET SUB2 O 0.5 HR AT 100DEGREES GAVE 73PERCENT (RHO-ET SUB2 NCH SUB2 C TRIPLE BOND CC SUB6 H SUB4) SUB2 S, ISOLATED AS THE DIPCATE, M. 161-5DEGREES; SIMILARLY WAS PREPD. 85PERCENT (RHO-ZCH SUB2 C TRIPLE BOND CC SUB6 H SUB4) SUB2 S (Z EQUALS PIPERIDINO) M. 62-5DEGREES (DI, HCL SALT DECOMP. 230DEGREES) IN A SIMILAR REACTION WITH PIPERIDINE, WHILE MORPHOLINE GAVE THE DIMORPHOLINO ANALOG, M. 75-7DEGREES; DIPCATE COMPOUND. 211-15DEGREES. I IN ACOH HEATED WITH 30PERCENT H SUB2 O SUB2 6 HR GAVE 71PERCENT SULFONE, M. 177-8.5DEGREES. ACETYLATION OF PH SUB2 S SUB2 WITH ACCL-ALCA SUB3 GAVE 13PERCENT (RHO-ACC SUB6 H SUB4 S) SUB2, M. 94.5-97DEGREES, WHICH AS ABOVE WAS CONVERTED INTO (RHO-HC TRIPLE BOND CC SUB6 H SUB4 S) SUB2, VERY UNSTABLE (NONISOLABLE) EVEN IN SOLM., IDENTIFIED BY ITS IR SPECTRUM. FACILITY: INST. KHIM. KINET. GOERNIYA, NOVOSIBIRSK, USSR.

UNCLASSIFIED

UDC 154.2+616.89.0CB.43

USSR

KHAMITOV, Kh. S. and KOTLYAREVSKIY, Ye. V., State Medical Institute im.
S. V. Kurashov, Kazan'

"Physiological Changes in Man During Mental Stress"

Leningrad, Fiziologicheskiy Zhurnal SSR, No 3, 1973, pp 361-365

Abstract: Various cardiovascular and hemodynamic parameters were investigated in high school graduates before and during entrance examinations for medical school. The stress of competition markedly accelerated the pulse rate, elevated blood pressure, decreased the number of eosinophils in peripheral blood, increased blood 17-hydroxycorticosteroids, and raised ascorbic and pyruvic acid levels (ascorbic acid decreased while pyruvic acid continued to increase after the first examination). The magnitude of the changes varied considerably from individual to individual. The cardiovascular reactions were mostly hypertensive. A few students had an extrasystole or syncope after the first examination.

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Radiobiology

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USSR UDC 617-001.28-06:616.441-089.87)-092.9-089:616.419-089.843

CHERTKOV, I. L., Professor, NEMENOVA, N. M., Professor, NOVIKOVA, M. N.,
KOTLYAROV, A. M., MALANINA, V. N., UDALOV, G. A., ROGACHEVA, L. S., and
SHEPSHELEVICH, L. I., Laboratory of Myelo-Hemotherapy of Acute Radiation
Sickness, Pathological Anatomy Laboratory, and Cytological Laboratory,
Central Institute of Hematology and Blood Transfusion, USSR Ministry of
Health, Moscow

"Transplantation of Allogeneous Bone Marrow to Thymectomized Irradiated
Monkeys"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 3, Mar 71,
pp 45-53

Abstract: Since transplantation of allogeneous bone marrow to irradiated
animals for the purpose of alleviating radiation sickness gives rise to
a secondary disease due to differentiation of the transplanted tissue into
lymphocytes which enter into an immunological reaction with the host, a
study was performed in which thymectomized monkeys were irradiated with
800-1,000 r and then given allogeneous bone marrow transplants. The thymec-
tomy did not prevent the development of the secondary disease, but made it
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USSR

CHERTKOV, I. L., et al., Problemy Gematologii i Perelivaniya Krovi, Vol 16,
No 3, Mar 71, pp 45-53

considerably milder and promoted regeneration of hematopoiesis of the donor type. Histological examinations indicated that bone marrow stem cells play an important role in the development of the secondary disease.

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USSR

UDC 681.325.65

BAZILEVICH, R. P., ZAMORA, Ye. F., ~~KOTLYAROV, A. V.~~, SAVENKO, N. M.,
SEREDYUK, A. I., and SHISHKA, A. V.

"A Logic Device"

USSR Author's Certificate No 276525, Filed 29 Mar 68, Published 19 Nov 70
(from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya
Tekhnika, No 8, 1971, Abstract No 8B132 P)

Translation: A logic device is proposed. In order to determine the parity of permutations, the device will contain: a diode matrix which transmits signals in one direction along all columns and along all rows; programing switches for forming sequences of time-separated interrogation pulses (the inputs of the switches are connected to the outputs of a multiphase multi-vibrator, and the outputs of the switches are connected to the cathodes of the diodes of the matrix); programing switches whose inputs are connected to the cathodes of the diodes of the matrix and whose outputs are connected to the inputs of the corresponding parity flip-flops; dual programing switches for forming sequences of time-separated interrogation pulses and for feeding the appropriate pulses to the appropriate inputs of the parity flip-flops concerned with the number of inversions between individual
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USSR

BAZILEVICH, R. P., et al., USSR Author's Certificate No 276525, Filed 29 Mar 68, Published 19 Nov 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 88132 P)

elements of the permutations. The device will also contain an indications flip-flop which is connected with the positive-sign indicator and the negative-sign indicator. The first input of this flip-flop is connected to the outputs of the parity flip-flops, and the second input is connected to the output of the multiphase multivibrator.

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USSR

UDC 681.141

KOTLYAROV, YE. V., GOLUBINSKIY, V. N., and SIDEL'NIKOV, YE. I., Ryazan Accounting, and Analytical Machine Factory

"A Tens Carrying Mechanism"

USSR Author's Certificate No 372556 kl G 06 s 15/26, filed 18 Mar 70, published 25 Apr 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A357 P)

Translation: A mechanism is proposed for carrying tens, containing a sector on the axis which is connected to a counting wheel and catch. To improve the reliability of operation of the mechanism, it contains a jointed push rod in contact with the catch, a projection kinematically connected to the drive and to the recess in which the axis and joint are located, attached to the sector. One illustration.

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1/2 020 UNCLASSIFIED PROCESSING DATE--1151970
 TITLE--RADIOISOTOPE DIAGNOSIS OF DECOMPENSATED TOXIC ADENOMA OF THE
 THYROID GLAND -U-
 AUTHOR--XOTLYAROV, E.V., FILATOV, A.A. **K**
 COUNTRY OF INFO--USSR
 SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 33-44
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--TUMOR, THYROID GLAND, DIAGNOSTIC METHODS, MEDICAL NUCLEAR
 APPLICATION, IODINE ISOTOPE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1985/1692 STEP NO--UR/0241/70/015/003/0038/0044
 CIRC ACCESSION NO--AP0101747
 UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11 SEP 79

CIRC ACCESSION NO--AP0101747
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PAPER SETS FORTH THE RESULTS OF COMPLEX CLINICAL LABORATORY AND RADIOISOTOPE INVESTIGATION OF 33 PATIENTS. IT WAS ESTABLISHED THAT THE INDICES OF RADIOISOTOPE INVESTIGATION OF PATIENTS WITH TOXIC ADENOMA OF THE THYROID GLAND SIGNIFICANTLY SURPASS (P IS GREATER THAN 99PERCENT) THOSE IN THE CONTROL GROUP OF PATIENTS. A COMPARISON OF THE RESULTS OF INVESTIGATION OF TOXIC ADENOMA OF MILD AND MODERATE FORM REVEALED NO STATISTICALLY SIGNIFICANT DIFFERENCES WITH THE EXCEPTION OF RADIOIODINE CONTENT IN THE BODY IN 196 HOURS, WHICH WAS HIGHER IN THE MODERATE FORM. AN ANALYSIS OF THE RESULTS TESTIFY TO THE FACT THAT EVEN IN A MILD FORM OF TOXIC ADENOMA THERE IS SEEN A DISTURBANCE OF ALL STAGES OF METABOLISM OF IODINE HORMONES: INTRATHYROID, TRANSPORT ORGANIC (EGGRESS OF HORMONES INTO THE BLOOD) AND PERIPHERAL.

UNCLASSIFIED

Acc. Nr: AP0034762

Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol. 15,
Nr 1, pp 36-39

ON THE DIAGNOSTIC VALUE OF RADIOISOTOPE INVESTIGATION OF IN VIVO
THYROXINE METABOLISM IN THYROTOXICOSIS

Kotlyarov, E. V.; Nechayenko, M. A.; Sukhotskiy, S. S.

Summary

The authors conducted an investigation of radioiodine-thyroxine metabolism in 9 cases of euthyrosis and 11 cases of thyrotoxicosis of mild and moderate severity with the aid of a monomonitor system for whole-body radiometry. There were found no significant differences in the value of the biological semiexcretion of radioiodine-thyroxine from the organism of both groups of patients. The diagnostic value of studying the thyroxine metabolism may be evaluated only upon condition of parallel qualitative determination of the volume and concentration of stable thyroxine in the body and the rate of discharge from the organism.

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REEL/FRAME
19711472

02

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE USE OF TC PRIME99M PERTECHNETATE FOR THE STUDY OF CHANGES OF
THE IRON CAPTURING FUNCTION OF THE THYROID GLAND UNDER THE INFLUENCE OF
AUTHOR--(02)-KGTLYAROV, E.V., BODKEVICH, YU.B.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 55-58

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TECHNETIUM ISOTOPE, IRON, THYROID GLAND, GOITER, AMMONIUM
PERCHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1385

STEP NO--06/0241/70/015/006/0055/0053

CIRC ACCESSION NO--AP0128735

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123785

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

ABSTRACT. THE AUTHORS COMMIT TO PAPER THE RESULTS OF DYNAMIC OBSERVATIONS OVER THE ACCUMULATION OF ¹³¹ I PERTECHNETATE IN THE THYROID GLAND IN 41 PATIENTS WITH TOXIC GOITER UNDER THE EFFECT OF INTAKE OF A SINGLE DOSE OF AMMONIUM PERCHLORATE AND MERCAZOLYL THERAPY. IN 15-20 MINUTES AMMONIUM PERCHLORATE CASES A DECREASED ACCUMULATION OF PERTECHNETATE. BLOCK REMAINS FOR 1-3 DAYS DEPENDING ON THE SEVERITY OF TOXIC GOITER. UNDER THE EFFECT OF MERCAZOLYL THERE IS SEEN A SIGNIFICANT RISE OF THE ACCUMULATION IN THE THYROID GLAND. A TENDENCY TO A REDUCTION OF THE ACCUMULATION IS NOTED IN 25 DAYS.

FACILITY: KAFEDRA RENTGENOLOGII I RADIOLOGII I MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. I. M. SECHENOVA.

UNCLASSIFIED

USSR

UDC 615.849.014.45:615.849.017:615.281

KOTLYAROV, L. M. and KONYAYEV, G. A., Institute of Biophysics, Moscow

"Study of the Antimicrobial Properties of Radioactive Injection Preparations in Relation to the Problem of Ensuring Sterility"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 5-10

Abstract: There are no rapid methods for checking the sterility of radioactive preparations, which should be shipped to the consumer within 18 to 24 hours after sterilization. Some of these preparations cannot withstand thermal treatment because of their physicochemical properties and indirect control is not always possible when other methods of sterilization are used. Study of some 20 of these compounds showed that a number possess bactericidal or bacteriostatic properties and are already sterile. For example, neohydrin (Hg^{203} , Hg^{197}), bromomercuroxypropane (Hg^{197}), sodium pertechnetate (Tc^{99M}), and radioactive preparations with benzyl alcohol in a 2% concentration have a marked bactericidal effect on a wide range of vegetative and spore forms of microorganisms and do not require additional sterilization. Bengal rose (I^{131}), iodognost (I^{131}), m - iodobenzoic acid (I^{131}), macroaggregates of albumin (I^{131}), zirconyl phosphate (P^{32}), sodium silicate, and radioactive

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USSR

KOTLYAROV, L. M. and KONYAYEV, G. A., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 5-10

preparations with 1% benzyl alcohol have pronounced bactericidal action and their sterility can be assured by combining them with substances or factors that help to destroy spores. Tables list the preparations studied, antimicrobial factor, and eight test microorganisms (St. aureus, E. coli, B. proteus vulgaris, B. subtilis, Cl. perfringens type A, B. anthracoides, and Torula utilis).

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USSR

UDC 621.317.75:621.317.018

KOTLYAROV, O. P., and LOMOV, G. I.

"A Synchronous Marker of Electrical Angles"

Vestnik Kharkovskogo Politekhnicheskogo Instituta, No 45 (93), 1970, pp 110-112 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 1, 1971, Abstract No 1.32.1170)

Translation: A description is given of a marker which makes it possible to obtain calibrating pulses, the distance between which in terms of electrical degrees remains invariable with a change of the input-voltage frequency within a wide range. The circuit of a marker with a photoelectromechanical rotation angle -- pulse number converter is presented. This marker can be used in the oscillography of electrical processes, in units for the generation of variable-frequency voltage, in units powered by alternating-current sources, or in measuring instruments, as a quantizing pulse generator. 1 figure. 8 bibliographic entries.

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USSR

UDC:621.165-225:533.6

KOTLYAROV, V.I.

"Aerodynamic Refinement of Exhaust Chamber of Large Steam Turbines,

Sverdlovsk, Sb. Opyt Sozdaniya Turbin i Dizeley (Symposium on Turbine and Diesel Design Practice), 1972, vyp 2, pp 57-62 (from Referativnyy Zhurnal-Turbostroyeniye, 1973, Abstract No 3.49.27)

Translation: The problem of refining the exhaust chamber, which is not adequate for the increased capacity of the turbine, is investigated. The aerodynamic refinement of the stiffener rib system of 135-300 mw turbines resulted in reduction of loss coefficient by 0.11. Reduction of energy losses was obtained by decelerating the flow and converting its kinetic energy into pressure; this was achieved by providing an annular diffuser formed by the cone enclosing the bearing and by a special fairing; the total reduction of the loss coefficient is about 0.33. 2 illustrations.

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AA0044630

KOTLYAROV

V. L.
UR 0482

Soviet Inventions Illustrated, Section II, Electrical, Derwent,

241530 DIGITAL BRIDGE BALANCED REGISTER BY REGISTER
characterized by inclusion of "OR" gates.

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It contains null-unit (1), code-resistance converter (2), and memory register (3) consisting of triggers (4-8), valves (9-13) connected to inputs of "zero" adjustment for triggers, and valves (14-18) connected to inputs of "unit" adjustment for triggers. It contains also clock pulse generator (19) connected to control unit (20), digital display indicator (21) and circuit of "OR" gates (22-29). When triggers (4-8) are "zero" adjusted, the outputs of first "OR" gates (22-25) will be at zero potential, and the outputs of second "OR" gates (26-29) will be at negative potential.

Valves (9-18) pass the impulses incoming from outputs (30) and (31) of control unit (20) only if they are also given zero potential from "OR" gates.

At the beginning of measuring cycle the impulse from output (31) adjusts to "unit" trigger (4) of the highest register (because only valve (14) receives zero potential from the gate "OR" (21). Afterwards on the output of gate "OR" (21)

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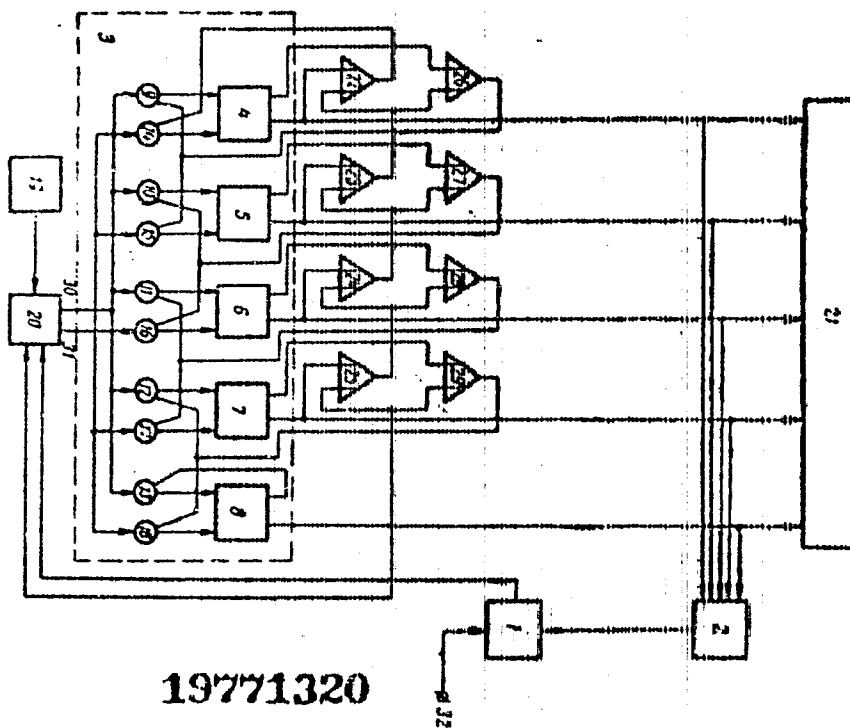
appears negative potential and of gate "OR" (26) zero potential which prepares valves (9) and (13). If the resistance being measured and connected to the input (32) of the null-unit is greater than those stored in memory register (3), then, during the passing of the pulse from generator (19), the control unit adjusts through valve (15) the trigger (5) to "unit". If the resistance is smaller than those stored in memory register, then the control unit gives impulses simultaneously on outputs (30) and (31) adjusting trigger (5) to "unit" and trigger (4) to "zero". Afterwards, on the output of "OR" gate (23) appears negative potential which, through gates (22) and (26), closes valves (14), (9) and (15), whereas output of "OR" gate (27) acquires zero potential which opens valves (10) and (16). In the next step, trigger (4) will be "unit"-adjusted and adjustment of trigger (5) will depend on the result of comparison of the resistance being measured with the output resistance of converter (2), and so on. When trigger (4) becomes "unit"-adjusted, its output will send a signal of the termination of the measuring process.

26.1.68 as 1212946/18-10. M.A. GAVRILYUK et al.
LVOV LENIN ORDER POLYTECHNIC. (19.9.69). Bul 14/
18.4.69. Class 2le. Int.Cl.G Ol r.

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AA0044630



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jc

AA0044630

AUTHORS: Gavrilyuk, M. A.; Kotlyarov, V. L.; Sogolovskiy, Ya. P.

L'vovskiy Ordena Lenina Politekhniceskij Institut

19771321

4/4

UDC 612.84.501.185.64

USSR

~~KOTLYARSKY, A. M.~~ and PROTUSEVICH, Yu. M., Chair of Physiology of Higher Nervous Activity, Moscow State University

"Analysis of the Process of Perception During Evaluation of Change in Distance"

Moscow, Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

Translation: The purpose of this work was to determine the correlation between the performance and efficiency of the visual system in judging distance under the following conditions: (a) with unrestrained looking, (b) with accommodation and convergence excluded, and (c) with the size of the image on the retina constant (control).

The experimental method was as follows. With unrestrained looking, the test object (spot of light) was projected onto a semispherical screen. The object was successively removed 750, 1000, and 1250 mm from the observer. The range of shifts (Δi) was 30, 60, and 90 mm, respectively. Eye movements were recorded with an inductive sensor attached to a sucking disk.

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USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Ya. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

With accommodation and convergence excluded, a microtachistoscope with a polarizing film was attached to the eyeball by means of a P3-P6 central sucking disk. This made it possible to present the observer with large and then small spots of light simulating near and more remote distances. Accommodation was blocked with a special device setting the test object to infinity. The device consisted of a magnifying glass and mobile support with a sucking disk on which were mounted a lens and sliding tube with the test object.

Experiments with the image on the retina constant were performed with a micro-projector attached to the eyeball with a central sucking dis. The angle of slope of the projector was such that at a certain distance the image of the test object projected coincided with the visual axis of the observer. The latter had to determine the change in position of the object.

The first stage of the experiment involved determining the threshold of discrimination with unrestrained looking. It amounted to 1 to 2%. The threshold of discrimination with accommodation and convergence blocked was 18 to 20%.

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USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

A microprojector (control) was used to record the eye movements (second stage). The motor activity of the eye with unrestrained looking was found to increase the resolving power of the visual system. Specifically, the threshold of discrimination in judging distance was no less than 1 to 2%, an indication of the high resolving power of the visual system. No significant difference in eye movements were noted after the distance of the test object was changed. When accommodation and convergence were blocked, the efficiency of the visual system decreased substantially and the threshold of discrimination rose to 18 to 20%. Recording of the eye movements revealed the absence of any specific fixations. Saccadic movements changed to drift and nystagmus appeared. The very fact of the lack of fixation indicates that each momentary position of the eye is not controlled by the proprioceptive link in regulation but results from reflex action of the optic signal.

V. P. Zinchenko and N. Yu. Vergiles (1969) state that when the image on the retina is stabilized, the subject has no basis for judging the position of the eye or keeping it in a fixed position.

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USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

When the size of the image on the retina was constant, the observer was unable to judge change in distance. Completely absent from the eye movements were tracking functions to preserve the background motor activity.

Thus, our findings suggest that with unrestrained looking, accommodation and convergence limit the motor activity of the eye when it is fixed on an object and thereby increase the accuracy of judgments concerning change in distance, i.e., the efficiency of discrimination.

The results of our experiments are consistent with the data presented by B. N. Kompaneyevskiy (1941) who showed that the sensations of convergence (accommodation) do not affect the judgment of distance directly, that they do so indirectly by altering the size of the image on the retina.

BIBLIOGRAPHY

1. Zinchenko, V. P. and N. Yu. Vergiles, Formirovaniye zriten'nogo obraza (Formation of Visual Images), Moscow State University Press, 1969.

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- 35 -

USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

2. Kompaneyskiy, B. N., O roli konvergentsii v vospriyatii glubiny prostranstva (Role of Convergence in the Perception of Spatial Depth), 1941, Moscow-Leningrad, Academy of Medical Sciences Publishing House.

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USSR

UIC 591.484.6

MORENKOV, E. D., and KOTLYARSKIY, A. M., Chair of the Physiology of Higher Nervous Activity, Moscow State University

"Some Data on Eye Movements in Man and Animals and Methods for Recording Them"

Moscow, Vestnik Moskovskogo Universiteta, Seriya 6, Biologiya, Pochvovedeniye, No 6, Nov/Dec 71, pp 35-41

Abstract: In order to investigate the connection between motor and sensory links in the process of visual analysis, especially in the visual centers of the brain, the eye movements of healthy persons were recorded upon presentation of moving and motionless stimuli. For comparison, the eye movements of fish, amphibians, birds, and mammals were also recorded, using not both human and animal subjects a special recording device developed by the authors. A description of the device is given and parameters obtained for the main types of macro- and micromovements of the eyes of human subjects are given. Results are compared with those cited in the literature, and the role which the various types of eye movements play in the perception of stimuli are discussed.

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- 54 -

KOTLYARSKIY, A.M.

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31 Mar 71

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107

PSYCHIATRICS
PASSIVE

Handwritten name and affiliation
Moscow State University, Faculty of Psychology

"On the Perception of Images Stimulated with Respect to the Retina"

Moscow, Voprosy Psichologii, No 6, November 70, pp 128-132

Abstract: Many experiments have been performed to determine the behavior of image stimulation with respect to the retina. However, in any case the effects of the optical properties of super-focal apparatus have not been completely investigated. This experiment was set up to determine the effects of different focal lengths on the behavior of the apparatus attached to the eye. The apparatus used permits the use of 2 millimeter lens the camera, i.e., about 5.05 millimeters from the retina. Two sets of experiments were performed, with lenses of focal length 5.5 millimeters and 13 millimeters. Calculations indicated that the apparent object which could be seen with the 5.5 millimeter focal length lens would be approximately 1/2 the size of the image on the retina would be 7.8 millimeters. In addition, the first lens would introduce angular distortions of up to almost 6 degrees from the parallel for a small object, while the second lens would produce no distortion as great as

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SO: Focality; Percept; Distort

USSR

AFRMOV, V. O., et al., Voprosy Psichologii, No 6, November 70, pp 128-132

The calculations were varied by experiments with three lens lenses. These lenses when short focal length lens subjects were unable to retain the image on the retina, and were usually unable to recover any significant portion of it when it was disappeared. With the lens of longer focal length the subjects retained an overall image quite easily; even individual components were "reared" - they were easily re-covered as well. In addition, the subjects felt greater stress in using the short focal length lens. These very significant differences indicate a clear necessity for both theoretical and experimental evaluation of optical systems used in studying images stimulated on the retina. With respect to focal length, a clear experimentally has been demonstrated for a lens with focal length of 13 millimeters.

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USSR

UDC: 772.96

KOTLYARSKIY, V.M.

"Magnetothermoplastic Recording With Carrier Transparency Variation"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii,
Vol 17, Vyp 5, 1972, pp 378-380

Abstract: The magnetothermoplastic recording is produced by deforming the surface of the carrier. Special optical devices are usually required to visualize the records. The subject article describes the experiments of making the records visible. The coating of the transparent carrier contained needle shape magnetic particles. The film was developed in a magnetic field normal to it; this resulted in a record of variable darkness. The variable darkness is due to the change in orientation of the needle shape magnetic particles under the action of the magnetic field induced by the recording combined with the external magnetic field acting during the development of the film. Photographs of typical records are presented.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF POLAROGRAPHY FOR CONTROLLING THE PRODUCTION OF
4, ACETYLNAPHTHALIC ANHYDRIDE -U-
AUTHOR--(05)--KOTOK, L.A., SHEVCHENKO, E.A., BEZUGLYY, Y.D., KRASOVITSKIY,
B.M., SLEZKO, G.G.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. UKR. 1970, (1), 46-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, NAPHTHENE, OXIDATION, POLAROGRAPHIC
ANALYSIS, ANPHTHALENE, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0739

STEP NO--UR/0436/70/000/001/0046/0048

CIRC ACCESSION NO--AP0119646

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--230CT7C

CIRC ACCESSION NO--AP0119646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF 4, ACETYLACENAPHTHENE (I) FORMATION AND OF ITS OXIDN. WITH NA SUB2 OR SUB2 OR SUB7 WERE STUDIED. I WAS DETD. IN THE SYNTHESIS PROCESS BY POLAROGRAPHIC ANAL. OF A SAMPLE IN A SUPPORTING ELECTROLYTE OF 0.02 N ET SUB4 NI SOLN. IN 92PERCENT MEDH. THE YIELD OF I DURING ACETYLATION OF ACENAPHTHENE IN THE PRESENCE OF SNCL SUB2 AT 100 AND 120DEGREES IS GIVEN AS A FUNCTION OF TIME. TO ANALYZE THE MIST. OF 4, ACETYLNAPHTHALIC AND 1,4,5, NAPHTHALENETRICARBOXYLIC ACIDS RESULTING FROM OXIDN. OF I, THE H SUB2 O LAYER CONTG. THEIR NA SALTS WAS ACIDIFIED WITH HCL AND EXTD. WITH C SUB6 H SUB6 AND ANALYZED POLAROGRAPHICALLY IN A SUPPORTING ELECTROLYTE OF 0.1 N CACL SUB2-ALC. SOLN. CONTG. 0.01 N LIQH. FACILITY: RUBEZHAN. KHIM. KOMB., RUBEZHNOE, USSR.

UNCLASSIFIED

Acc. No: **AP0049798** Abstracting Service:
CHEMICAL ABST. 517c

Ref. Code:

UR0079



96046e Polarographic study of unsaturated ketones with substituents. Polynuclear aromatic systems. ~~Bezugi, V. D.; Lodygin, L. A.; Kononenko, G. M. (USSR). Zh. Obshch. Khim. 1970, 40(1), 22-5 (Russ).~~ Polarographic data on half-wave potentials are presented tabularly and graphically for ArCH:CHCOAr' where Ar were selected from 2-fluorenyl, Ph, 1-C₁₀H₇, 2-C₁₀H₇, or p-PhC₆H₄, and Ar' was selected from Ph, 1-C₁₀H₇, 9-anthryl, 2-fluorenyl, or p-PhC₆H₄ groups. Introduction of polycyclic substituents into the chalcones raised the polarographic activity of these and it was shown that the primary redn. reaction involves the participation of the unsatd. ketone carbonyl groups.
G. M. Kosolapoff

I. 13

REEL/FRA
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Acc. Nr: APO047373

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Ref. Code: UR0589

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 107-111

THE EFFECT OF VARIOUS METHODS OF PREMEDICATION ON SOME
NEURO-ENDOCRINOUS REACTIONS IN SURGICAL PATIENTS

By V. A. Leosko, V. E. Ryzhenkov, G. L. Kotomina, V. M. Korzhikova and M. P. Romanova

In 166 surgical patients the effect of various combinations of preparations used for premedication has been studied. The data obtained enabled the authors to recommend the authors a more wide use of cholinolytics of central action in a complex of premedication agents.

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REEL/FRAME
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1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INDIVIDUAL AND COMBINED INFLUENCE OF RADIATION AND INHIBITORS OF
PROTEIN AND DNA SYNTHESIS ON THE CELLS OF CREPIS CAPILLARIS -U-
AUTHOR-(02)-MITROFANOV, YU.A., KOTOMINA, I.F.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA; 6: NO. 3, 18-29(MAR 1970)
DATE PUBLISHED----MAR 70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLANT PHYSIOLOGY, RADIATION BIOLOGIC EFFECT, CHROMOSOME,
MITOSIS, DNA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0667 STEP NO--UR/0473/70/006/003/0018/0029
CIRC ACCESSION NO--AP0117892
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODIFICATION OF CHROMOSOME AND CHROMATID ABERRATIONS WAS FOUND TO APPEAR IN THE DIFFERENT PHASES OF THE MITOTIC CYCLE. THE FORMER WERE MODIFIED IN G SUB1 AND S, WHILE THE LATTER IN S AND G SUB2. IT IS APPARENTLY CONNECTED WITH THE PRODUCTION OF THE CHROMOSOME ABERRATIONS IN THE S PHASE (POSSIBLY JUST BEFORE THE DNA SYNTHESIS IN A CHROMOSOME) AND THE CHROMATID ABERRATIONS, IN G SUB2 (PROBABLY JUST BEFORE THE MITOSIS). FUDR INDUCED MODIFICATION OF THE RADIATION EFFECT WAS FOLLOWED BY CHROMOSOME FRAGMENTATION, WHICH ACCOUNTED FOR THE CHANGES IN THE ABERRATIONS SPECTRUM. A VERY APPRECIABLE EFFECT WAS NOTED FOR THE CHROMATID ABERRATIONS WHEREAS FOR THE CHROMOSOMES IT WAS LESS PRONOUNCED. THE MUTAGENIC AND MODIFYING EFFECT OF FUDR WAS IN ACCORDANCE WITH THE RATE OF DNA SYNTHESIS IN THE CELL. THE STRONGEST FUDR EFFECT WAS NOTED ONLY WHEN THE FOLLOWING THREE EVENTS WERE SYNCHRONIZED: IRRADIATION, DNA SYNTHESIS IN THE CELL, INCORPORATION OF AN INHIBITOR. IN THIS CASE ONE COULD OBSERVE THE EXTRA FUDR EFFECT ON THE RADIATION INDUCED CHROMOSOME DAMAGES. PYROMYCIN CONSIDERABLY INCREASED THE CHROMOSOME ABERRATION NUMBER IN IRRADIATED CELLS, BUT FAILED TO CHANGE THEIR SPECTRUM. THE STRONGEST ACTIVITY OF THE CHEMICAL WAS NOTED FOR THE CELLS IN G SUB1 AND G SUB2. IT WAS LESS ACTIVE IN THE S PHASE. FACILITY: INST. OF GENERAL GENETICS, MOSCOW.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF FORMATION CONDITIONS ON THE OVERALL MOLECULAR ORIENTATION
OF AN UNSTRETCHED VISCOSE RAYON FIBER -U-
AUTHOR--(02)--KOTOMINA, I.N., SERKOV, A.T.

COUNTRY OF INFO--USSR

SOURCE--KHIM VOLOKNA 1970, (2), 43-6

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RAYON, COAGULATION, MOLECULAR STRUCTURE, REFRACTIVE INDEX,
TEXTILE INDUSTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0821

STEP NO--UR/0183/70/000/002/0043/0046

CIRC ACCESSION NO--AP0124488

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124488

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF THE COAGULATING BATH COMPN. AND TEMP. ON THE BIREFRINGENCE INDEX (ΔN EQUALS THE DIFFERENCE BETWEEN THE REFRACTIVE INDICES IN 2 PERPENDICULAR DIRECTIONS) OF THE UNSTRETCHED RAYON FIBER. THE INCREASE OF ZNSO SUB4, NA SUB2 SO SUF4, AND (OR) H SUB2 SO SUB4 CONCNS. ALL INCREASED ΔN . THE MAX. ΔN WAS OBTAINED AT 40-60DEGREES COAGULATING BATH TEMP. THE INCREASE IN THE DIAMS. OF SPINNERETTE OPENINGS DECREASED ΔN . THESE RESULTS ARE EXPLAINED IN TERMS OF THE SELECTIVE DIFFUSION AND ION DESORPTION THEORY. THE DIFFUSION CAUSES COAGULATION OF THE POLYMER MOLS. IN LAYERS AND HENCE THEIR ORIENTATION EVN WITHOUT DRAWING.

UNCLASSIFIED

USSR

UDC 539.183.3

KOTOMINA, R. A., Ivanovo Chemical-Technological Institute

"Calculating the Equilibrium Constant of the Ionization of Uranium and the Degree of Ionization of Uranium Plasma"

Ivanov, *Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya*, Vol XV, No 7, 1972, pp 1111-1112

Abstract: The equilibrium constants for the thermal ionization of the uranium atom and the degree of ionization of uranium plasma were calculated for pressures of $0.01 \leq p \leq 100$ atmospheres and temperatures of $1,000 \leq T \leq 20,000^\circ \text{K}$. The thermal ionization constant was calculated by the formula

$$K_p = \frac{2Q_+}{Q} \cdot \frac{(2\pi m)^{3/2}}{h^3} (kT)^{5/2} e^{-E/kT},$$

where m is the electron mass, h is Planck's constant, k is the Boltzmann constant, Q_+ and Q are the electron statistical sums of the uranium ion and atom, E is the ionization energy of the uranium atom. The electron statistical sums Q_+ and Q were calculated by a previously published procedure [A. A. Zaytsev, et al., *Atomnaya energiya*, No 30, 449, 1971]. The unknown energy levels

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KOTOMINA, R. A., *Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya*, Vol XV, No 7, 1972, pp 1111-1112

were taken into account as described in the same paper, and the experimental data available on the energy levels were taken from the paper by L. V. Garvich, et al. [Simposium po termodinamike, Vienna, July 1965]. The degree of ionization of the uranium plasma was calculated by the values of the equilibrium constant obtained using the following formula [V. G. Levich, Vvedeniye v statisticheskuyu fiziku, GITTL Press, 1954]:

$$a = \frac{1}{\sqrt{1 + p/K_p}}$$

The calculated equilibrium constants and degrees of ionization are tabulated.

2/2

Lasers & Masers

USSR

UDC: 621.375.82

SAMSON, A. M., KOTCHTSEVA, L. A., LOYKO, N. A., GORCHANUK, I. M.

"Emission Kinetics of a Laser With a Nonlinear Delayed-Action Element"

Minsk, Kinetika generatsii OKG s nelineynym elementom zapazdyvayushchego deystviya. In-t fiz. AN ESSR (cf. English above. Institute of Physics of the BSSR Academy of Sciences), 1973, 44 pp, ill., mimeo. (From RZh-Fizika, No 11, Nov 73, abstract No 11D1330)

Translation: On the basis of balance equations, an analysis is made of the kinetics of operation of a laser with a nonlinear delayed-action element. An example of such an element is a Kerr cell which increases or reduces laser losses with increasing emission power. An analysis of these equations showed that with certain values of delay time and parameter of nonlinearity the lasers emit regular undamped radiation peaks with a recurrence rate approximately quadruple the delay time. The authors determine the regions of variations in parameters of the laser and the nonlinear element where such pulsations arise. An investigation is made of the influence of noises on the kinetics of laser operation in the mode of undamped pulsations of emission power, and their stabilizing action is observed. Analytical evaluation are illustrated by computer solution of differential equations. Bibl. 32.
1/1

USSR

UDC: 535.51

SAMSON, A. M., KOTOMTSEVA, L. A., and MILIKHEVICH, A. V.

"Transmission of Short Radiation Pulses Through Linear Amplifying and Absorbent Media"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 17, No 2, 1972, pp 228-236

Abstract: A theoretical and rigorous solution is proposed to cover one aspect of the problem of propagating light pulses through various types of media. This single aspect involves the laws of propagating short coherent pulses in linear amplifying or absorbent media, with the pulses defined as those whose spectral width is small compared with the uniform width of the corresponding amplification or absorption band. The solution is obtained through the Laplace transform and yields simple formulas for the electric field intensity as well as the polarization of the medium for any form and frequency of the incident pulse. Among the advantages claimed for the authors' method are its simplicity and the fact that the approximations sometimes required for simplifying the calculations can be made in finite form. The analytic computations for the resonance case are compared on the electronic computer with the solutions of the Maxwell equations and the density matrix, and a good agreement between the two methods is found.

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USSR

SAMSON, A. M., KLYUKANOVA, N. A., and KOTOMTSEVA, L. A.

"Formation from Noises of Longitudinal Types of Oscillations of a Laser in the Preoscillation Period"

Minsk, Zhurnal Prikladnoy Spektroskopii, May 1971, pp 809-814

Abstract: The formation of longitudinal types of oscillations from noises having a dispersion boundary were studied. On the basis of recurrent relationships for the intensity of the electrical field analytic expressions for the envelopes of the radiation maxima and the forms of the individual longitudinal mode up to the beginning of oscillation were obtained. The wave properties of the resonator, dispersion of the active region, and dependence of the refractive index on the population inversion were taken into consideration. Losses were assumed to be the same for all modes.

The article includes 24 equations and two figures. There are 5 references

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1/2 029 UNCLASSIFIED PROCESSING DATE--13 OCT 70
 TITLE--CORRELATION OF PHYSICAL BEHAVIOR OF POLYIMIDES WITH THEIR STRUCTURE
 -U-
 AUTHOR--(05)-RUDAKOV, A.P., BESSONOV, M.I., TUICHYEV, SH., KOTIK, P.S.,
 FLUKIRSKIY, P.S.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMEL. SOEDIN., SER. A 1970, 12(3) 641-8
 DATE PUBLISHED-----70

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SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYIMIDE RESIN, POLYMER STRUCTURE, IMIDE, ELASTICITY,
MOLECULAR INTERACTION, CHEMICAL BONDING, CONJUGATED POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0326

STEP NO--UR/0459/T0/012/003/0641/0643

CIRC ACCESSION NO--AP0111520

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0111520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DISCUSSION WITH 11 REFS. OF THE PROPERTY STRUCTURE RELATIONS OF I, WHERE R AND R PRIME ARE TETRAVALENT AND DIVALENT AROMATIC RINGS RESP. OR CONSIST OF SUCH AROMATIC RINGS SEPD. BY O, S, SO SUB2, OR CH SUB2 BRIDGES. THE IMIDE RING, WHICH INTERRUPTS THE CONJUGATION OF THE POLYMER CHAIN ACTS AS A "HINGE" AND INFLUENCES THE ELASTICITY OF I. THE TEMPS. OF I PHASE TRANSITION POINTS DEPEND NOT ONLY ON THE CHAIN ELASTICITY, BUT ALSO ON THE INTERMOLEC. INTERACTIONS, IN PARTICULAR ON THE BONDING BETWEEN CO GROUPS OF THE IMIDE RINGS.

UNCLASSIFIED

Acc. Nr:

AP0041536

Abstracting Service:

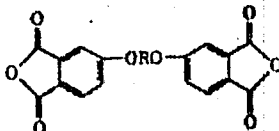
CHEMICAL ABST.

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Ref. Code:

LR0366

9000p Synthesis of new dianhydrides of aromatic tetra-carboxylic acids. II. Koron, M. M.; Florinskii, E. S. (Inst. Vysokomol. Soedin., Leningradsk. Univ., Leningrad, U.S.S.R.) *Dokl. Akad. Nauk SSSR*, 1970, 6(1), 83-90 (Russ). The condensation of 3,4-Me₂C₆H₃OK with BrRBr [R is 4,4'-C₆H₄C₆H₄ or O(C₆H₄-4)] gave R(OC₆H₃Me₂-3,4)₂, which was oxidized with KMnO₄ in alk. soln. to R(OC₆H₃-



(II, R = 4-C₆H₄-4)
(III, R = 4-C₆H₄O-4)

(CO₂H)-3,4), (I). Heating I at 250-300°/80 mm gave 4,4'-bis-(3,4-dicarboxyphenoxy)biphenyl dianhydride (II) or 4,4'-bis-(3,4-dicarboxyphenoxy)diphenyl ether dianhydride (III). CPJR

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19751404