

USSR

UDC: 681.3.06:51

YASHARKIN, Yu. K.

"Formalizing the Recording of an Algorithm of the Operation of Ordering of Information With Nonrepeated Characteristics"

Tr. N.-i. i proyektov in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo
(Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1971, vyp. 6, pp 53-59 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V941)

Translation: The author proposes a method of formalized recording of one of the methods of ordering of information known in the literature by the name of "the method of ordering by varying the characteristics of normative information." In this method, the sequence of arrangement of the characteristics of variable information is given by the arrangement of the characteristics of the normative information, all characteristics of the variable information being compared in sequence with those of the normative information. To formalize recording of the algorithm of ordering, the logic operator of comparison

$$F(b_j, a_i) \begin{cases} 1 & \text{when the characteristics coincide} \\ 0 & \text{when the characteristics do not coincide} \end{cases}$$

is used. The corresponding algorithm is given. V. Mikheyev.

1/1

USSR

UDC: 681.3.06:51

YANCHUK, V. I., YASHARKIN, Yu. K.

"Use of a Logic Operation of Comparison to Formalize the Recording of Algorithms for Accounting Jobs"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo
(Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1971, vyp. 6, pp 39-52 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V940)

Translation: The article demonstrates the use of the logic operator of

comparison $(a_1, a_2) = \begin{cases} 1, & \text{if } a_1 = a_2 \\ 0, & \text{if } a_1 \neq a_2 \end{cases}$ to formalize the recording of an algorithm

for an actual accounting job -- "Accounting for Influx of Semifinished Goods" solved under conditions of the operation of the system for automatic management of the Tatmekhob"yedineniye Amalgamation. A distinguishing feature of the described algorithm is that it formalizes not only the recording of arithmetic operations, but also the recording of operations involving transformation of the information structure (sorting, selecting, regrouping, etc.). V. Mikheyev.

1/1

USSR

UIC 627.8:550.834

MIKHAYLOV, A. D., YASHCHENKO, Z. G., and BOLOVINA, N. M., Engineers

"Experience in the Use of Seismoacoustic Methods for Determination of the Zone of Rock Removal for Foundations of Concrete Structures of the Ust'-Ilimskaya Hydroelectric Power Plant"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 10, Oct 73, pp 17-21

Abstract: A description is given of the use of seismic methods for the determination of sectors with the predominant development of horizontal or vertical jointing. Seismic transmission between the joints is used for three-dimensional delineation of isolated zones within the depth of the massif. Seismic observation permits objective and continuous determination of the depth of propagation of intensively fissured rock of the basis of selected profiles, and permits quantitative characterization of the integrity of the rock in a zone of surface destruction.

A combination of geological-engineering and seismoacoustic research should be applied in study of the foundations of large hydraulic-engineering structures. 6 figures. 1 table. 7 references.

1/1

Acc. Nr: **AP0043664**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 460-474
ABSORPTION SATURATION IN THE ELECTRON-PHONON
SPECTRUM OF CdSe

Dute, A. F.; Timofeev, V. B.;
Fayn, V. M.; Yashchin, E. S.

The dependence of the absorption coefficient in the exciton-phonon spectrum of semiconductors on intensity of the incident monochromatic radiation is analyzed theoretically. Two possible absorption saturation mechanisms are considered. One, which may be termed an integral mechanism occurs on conservation of the nonequilibrium exciton distribution in the band and when intraband relaxation is more rapid than escape of excitons from the band. The second, so-called differential saturation mechanism, is characterized by a nonequilibrium distribution of excitons in the band and takes place if the rate of exciton escape from any band point is greater than the rate of intraband relaxation. A Q-switched ruby laser was used for studying nonlinear absorption in the exciton-phonon spectrum in CdSe single crystals at 80-120° K. The integral saturation mechanism is found to occur. The mean exciton lifetimes in the band are found; in the indicated temperature range they vary between 10^{-8} and $3 \cdot 10^{-8}$ sec.

1/1

REEL/FRAME
19770068

21-DI

USSR

UDC: 621.383.8.029.65

GROSHEV, I. N., FUKS, L. B., YARESHKO, Yu. P., YASHCHISHIN, P. I.

"Limiting Energy Efficiency of Microwave Scanning Radio Image Converters"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 894-896

Abstract: The authors consider semiconductor radio image converters in the millimeter wave band designed for obtaining images of objects in fog. The radio image of the object in the focal plane of an optical type antenna is scanned by localized control of the conductivity of a semiconductor plate which is also located in the focal plane of the antenna. An analysis of the energy efficiency of such a scanning image converter shows that the power transmission factor is equal to -20 or -30 dB or less regardless of the design of the equipment.

1/1

-- 82 --

USSR

UDC: 621.317.783(088.8)

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

"An SHF Power Meter"

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

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

1/1

USSR

UDC 622.6-501.433

POPOVICH, N. G., BAZILEVICH, P. A., ALTUKHOV, YE. I., YASHCHUK, I. M.
and TIMOSHUK, V. V.

"Investigation of Automatic Control System for Dynamic Braking Mode
with Magnetic Power Amplifiers and Contactless Fixed Speed Transducer"

Vestn. Kiyevsk. Politekhn. In-Ta Ser. Gron. Elektromekhan. i Avtomati-
tiki (Herald of Kiev Polytechnical Institute Mining Electromechanics
and Automation Series), No 1, pp 48-52, 1969 (from Referativnyy Zhurnal
Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, 1970,
Abstract No 2A643 by B. A.)

Translation: The dynamics of an automatic control system for a cage
elevator in the dynamic braking mode with magnetic power amplifier and
contactless fixed speed transducer type BD-501A are studied. In con-
nection with the low output power of the transducer, an intermediate
magnetic amplifier is used. In order to study the stability of the
control system, the authors derive the characteristic equations of the
closed system. Values are found for parameters of the intermediate
magnetic amplifier for which the system is on the boundary of stability.
One illustration, two bibliographies.

1/1

Yashchuk, N. Ya.

AN0012150

UK 9013

AUTHOR-- V. A. YEFIMOV, CORRESPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES, DIRECTOR, THE INSTITUTE OF FOUNDING PROBLEMS /IFP/

*9
5
15*

NEWSPAPER-- PRAVDA UKRAINY, JANUARY 11, 1970, P 2, COLS 1-3

ABSTRACT-- THE AUTHOR DIRECTED A PROGRAM AT THE IFP, THE RESULT OF WHICH WAS A NEW HIGH-SPEED TEEMING OF 17-23 TON INGOTS OF THE OPEN-HEARTH STEEL. THE "CORRUGATED" INGOT WALLS PREVENT THE FORMATION OF CRACKS IN RIMMED STEEL INGOTS. THE NEW METHOD INCREASED THE POURING RATE BY A FACTOR OF 8-10 AND CUT THE TIME BY A FACTOR OF 2.5. THE NEW METHOD IS PRACTICED AT THE METALLURGICAL PLANT IMENI IL, ICH IN ZHDANOV AND THE CHEREPOVETS PLANT. CANDIDATE OF TECHNICAL SCIENCES V. N. SAPKO AND ENGINEER V. V. SHEPELEV PARTICIPATED IN THE RESEARCH PHASE OF THIS PROGRAM.

1/2

19570979

18

AN0012150

THE INSTITUTE ALSO CONDUCTED RESEARCH INTO UNDER-SLAG POURING OF STEEL /ENGINEER V. P. OSIPOV, A DEPARTMENT HEAD, CANDIDATE OF TECHNICAL SCIENCES ~~M. YA. VASHCHUK~~, ET. AL./ AND COLLABORATED WITH PATON'S INSTITUTE OF ELECTRIC WELDING IN DEVELOPING THE PRODUCTION TECHNOLOGY OF THIS PROCESS. AS A RESULT, THE PRODUCTION TIME HAS BEEN REDUCED TO ONE-TENTH, AND THE AMOUNT OF REJECTS BY A FACTOR OF 2-32, DEPENDING UPON THE GRADE OF STEEL.

sw

2/2

19570980

USSR

UDC 621.315.592

ALFEROV, ZH. I., ANDRIYEV, V. M., BELOUSOVA, T. YA., BORODULIN, V. I., GORBYLEV, V. A., PAK, G. T., PETROV, A. I., PORTNOY, YE. L., CHEENOUSOV, N. P., SHVEYKIN, V. I., YASHCHUMOV, I. V.

"Effective Injection Heterolasers Operating in the Wavelength Band of 7,400-9,000 Å"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 568-569

Abstract: Results are presented from a study of the characteristics of effective heterolasers radiating in the wavelength band of 7,400-9,000 Å at room temperature. The n-Al_xGa_{1-x}As-p-Al_yGa_{1-y}As-p⁺-Al_xGa_{1-x}As heterojunctions were obtained by epitaxial growth from GaAs-AlAs solutions. All the investigated diodes had a Fabry-Perot resonator. The threshold current density, the external differential quantum efficiency and the radiation power per pulse at 300°K are tabulated for various models of the lasers. Graphs are presented showing the mean values of the threshold current density and the external differential quantum efficiency as functions of the emission quantum energy and the temperature dependence of the external differential quantum efficiency. The threshold current density increases exponentially with an increase in temperature according to the known law [V. I. Leskovich, et al., FTP, No 1, 1440, 1967]. Up to 1/2

USSR

ALFEROV, ZH. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 568-569

a temperature of 250° K, the external differential quantum efficiency does not vary, in practice, but then it decreases with temperature. The data demonstrate the possibility of obtaining generation in the continuous mode at 300°K up to 7,700 Å.

2/2

- 86 -

USSR

YASHIN, A.

"A Stable Self-Excited Oscillator for 430-440 MHz"

Moscow, Radio, No 1, Jan 70, pp 23-25

Abstract: The author proposes a self-excited oscillator circuit for 430-440 MHz based on a tunnel diode and designed for amateur radio applications. The tank circuit of the oscillator is a short-circuited coaxial line which is loaded at the open end by the tank capacitor. The rf output energy of the oscillator is coupled out by a loop coupler. The tunnel diode used in the device is an AI201A, which has a critical working frequency of 1 GHz. The power supply is a rectifier stabilized by a transistorized compensation stabilizer with a divider at the output. The proposed unit has less output power than vacuum tube oscillators, but it has the advantage of greater stability. If the device is thermostatically controlled, a relative instability of $(3-5) \cdot 10^{-7}$ can be achieved.

1/1

USSR

YASHIN, A. F.

"Hypersonic Flow Past Axially Symmetric Bodies"

Tr. Novosib. in-ta inzh. zh.-d. transp. (Works of Novosibirsk Institute of Railroad Transportation Engineers), 1970, vyp. 109, pp 53-67 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B353 by author)

Translation: The article describes an approximate method for the solution of the inverse problem of hypersonic steady-state flow of an adiabatic gas past axially symmetric bodies at zero angle of attack. The shape of the shock wave is assumed to be known, while the equation of the streamlined body and hydrodynamic elements in the flow between the body and the shock wave are determined. Curvilinear axes of ordinates, directed along the shock wave and along the normal to it in the direction of the streamlined body, are introduced into the meridian plane. A solution is sought in the form of a power series of small parameter ϵ , equal to the gas density ratio before and after a direct shock wave. The author considers shock waves in the form of a cone, sphere and catenoid. In the last two cases outgoing shock waves are formed. Solutions are obtained which are accurate within first- or second-order smalls. Graphs are presented.

1/1

1/2 006
UNCLASSIFIED
TITLE--CONDITIONAL SEMIVARIANTS IN PROBLEMS OF FILTERING OF PROCESSES WITH
INTERMITTENT COMPONENTS -U-
AUTHOR--YASHIN, A.I.
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 2, PP. 20-26
DATE PUBLISHED--70
SUBJECT AREAS--MATHEMATICAL SCIENCES
TOPIC TAGS--MARKOV PROCESS, ALGORITHM, FILTER THEORY.
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1918
CIRC ACCESSION NO--AP0054719
STEP NO--UR/0103/70/000/002/0020/0026
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054719

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF THE FILTERING OF THE MARKOVIAN PROCESSES WITH INTERMITTENT COMPONENTS IS INVESTIGATED. THE ALGORITHMS ALLOWING TO APPROXIMATELY DETERMINE OPTIMAL ESTIMATIONS ARE OBTAINED. EXAMPLES ARE PRESENTED.

UNCLASSIFIED

USSR

UDC 666.972.7.035.55:539.374

YASHIN, A. V., and CHERNOYAROVA, T. G. (Scientific Research Institute of Concrete and Reinforced Concrete)

"Influence of Steam Curing on the Creep of Heavy Concretes"

Moscow, Beton i Zhelezobeton, No 12, Dec 73, pp 11-13

Abstract: Consideration is given to the results of comparative experiments on the influence of steam curing upon the creep and the elastic properties of heavy concrete. Possible ways are indicated for a better method of determining the creep deformations of concrete during changing load regimes.

It is recommended that the initial modulus of elasticity and the value of the creep deformations of steam-cured concrete be decreased by about 20-30% in comparison to naturally hardening concretes. Irreversible creep deformations of the I kind, connected only with the action of a prolonged load, comprise, at low stress levels, 25-30%, and at high stress levels comprise 50-55% of the total value of the creep deformations of a concrete that hardens naturally and is subjected to moist-heat treatment. Failure to take these deformations into account can, in a number of cases, bring about substantial errors. The recommended refined variant of the theory of concrete creep eliminates errors

1/2

USSR

YASHIN, A. V., and CHERNOYAROVA, T. G., Beton i Zhelezobeton, No 12, Dec 73,
pp 11-13

originating in the application of the principle of the imposition of actions in
the traditional manner. 3 figures. 5 references.

2/2

- 29 -

USSR

DIVNOGORITSEV, G. P., KARACHENTSEVA, N. Ya., and YASHIN, V. M.

"Data Transmission in Computer Center Nets" (book)

Minsk, "Nauka i Tekhnika" Publishing House, 1971, 177 pp

TRANSLATION OF TABLE 5 (p 150);

Parameters of General-Purpose Computers
Capable of Serving Communications Nets

| Type of General-Purpose Computer | Addition Time, msec | Working Storage Capacity, Thous. Mds | Word Length, bit | Access Time, msec | IO Capacity, Mill. Mds | IO Capacity, Mill. Mds | IO Capacity, Mill. Mds | Number Channels Served | Transmission Rate, Bauds | Multi- program- Capabil- ity | Cost, Thous. Rub. or Dollars |
|-------------------------------------|---------------------------|---|---------------------|----------------------|---------------------------|---------------------------|---------------------------|------------------------------|-----------------------------|---------------------------------------|------------------------------------|
| "Minsk-23" (USSR) | 1 | 8-19 | 8 | 13 | 6 | - | - | 16 | 50 | yes | 210 |
| "Minsk-32" (USSR) | 40 | 3-32 | 36 | 5 | 33 | - | - | 32 | 50 | " | 350 |
| "Ural-14" (USSR) | 22 | 16-63 | 24 | 3 | 160,000 | 40 | 40 | 8 | 1200 | " | 500 |
| "Ural-16" (USSR) | 22 | 131-512 | 48 | 3 | 480,133 | 40 | 40 | 32 | 1200 | " | 500 |

1/2

USSR

DIVNOGORTSEV, G. P., et al., "Nauka i Tekhnika" Publishing House, 1971, 177 pp

| | | | | | | | | | | | |
|---------------------------------------|------|---------|----|------|-----|-----|------|------|-------|---|------|
| "Dnepr-2" (USSR) | 25 | 4-65 | 65 | — | 33 | — | — | 760 | — | " | — |
| "UNIVAC-418" (USA) | 1,5 | 32-131 | 18 | 0,75 | 78 | 1 | 22 | 512 | 2400 | " | 600 |
| "UNIVAC-490" (USA) | 6,7 | 16-131 | 32 | 4,8 | 78 | 1 | 3 | 64 | 2400 | " | — |
| "UNIVAC-9200" (USA) | 104 | 8-16 | 8 | 1,2 | 9,6 | — | — | — | 2400 | " | 75 |
| "UNIVAC-9300" (USA) | 52 | 8-52 | 8 | 0,6 | 9,6 | — | — | — | 23000 | " | 345 |
| "UNIVAC-9400" (USA) | 52 | 34-192 | 8 | 0,6 | — | — | 60 | 24 | 25000 | " | 250 |
| CDC-3150 (USA) | 3500 | 8-32 | 24 | 1,75 | — | — | — | — | 2400 | " | 325 |
| CDC-3600 (USA) | 2 | 32-262 | 48 | 0,7 | — | — | — | — | 48000 | " | 1737 |
| IBM-360 (USA) | 0,8 | 16-1018 | 8 | 0,75 | 300 | 1,2 | 112 | 512 | 2400 | " | 5500 |
| "Burroughs-8500" (USA) | 0,6 | 65-1018 | 8 | 0,5 | 360 | — | 100 | 1024 | 2400 | " | 4200 |
| "System 4-70" (England) | 8,7 | 65-1018 | 8 | 1,5 | — | 2,0 | 350 | 80 | 4800 | " | 278 |
| "Leo-326" (England) | 8,4 | 8-32 | 48 | 2,5 | — | — | 1888 | 61 | 1200 | " | 320 |
| "Fakon-230/30" (Japan) | 56,1 | 8-32 | 6 | 2,2 | — | 18 | 60 | 160 | 50 | " | — |
| "Boule-General Electric 105" (France) | 7,5 | 4-8 | 18 | — | — | — | 2,0 | — | 2400 | " | — |

2/2

1/2 038

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DEVICE FOR STUDYING PHOTOGRAPHIC PROPERTIES OF PHOTOPOLYMERIC LAYERS -U-

AUTHOR--(05)--FRUNZE, N.K., YASHIN, V.P., BRAZNIKOV, YE.M., RUSSIYAN, YE.K., SEMENOVZHUKOVA, M.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. NAUCH. PRIKL. FOTOGR. KINEMATOGR. 1970, 15(2), 143-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--POLYMER, POLYPROPYLENE, PLASTIC FILM, UV RADIATION, POLYACRYLATE RESIN, ACETATE, PHOTOGRAPHIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1423

STEP NO--UR/0077/70/015/002/0143/0145

CIRC ACCESSION NO--AP0116870

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0116870

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. WAS DESIGNED FOR DETG. THE SENSITOMETRIC CHARACTERISTICS OF PHOTOPOLYMERS. THE SAMPLE WAS PLACED BETWEEN THE BASE OF A FRAME AND AN ELASTIC TRANSPARENT FILM MADE OF POLYPROPYLENE. THE SPACE BETWEEN THE FRAME AND THE FILM WAS EVACUATED SO THAT THE FILM WAS TIGHTLY PRESSED TO THE SAMPLE AND THE SAMPLE TO THE BASE OF THE FRAME THAT WAS THERMOSTATED. A PARALLEL UV RADIATION BEAM OF DIAM. 100 MM WAS USED SO THAT 70 TIMES 70 MM SAMPLES COULD BE TESTED. POLYACRYLATES WERE EXAMD. BY COATING THEM ON A TRANSPARENT TRIACETATE SUBSTRATE TO A THICKNESS OF 50 MU. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF THE ENERGY OF HYDROGEN BONDING BY A GAS LIQUID
CHROMATOGRAPHIC METHOD -U-
AUTHOR--(02)-CHULPANOVA, L.V., YASHIN, YA.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 773-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN BONDING, CHROMATOGRAPHY, ORGANIC NITRO COMPOUND,
PHENOL, CHLORINATED AROMATIC COMPOUND, ANILINE, TEMPERATURE DEPENDENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1381 STEP NO--UR/0076/70/044/003/0773/0774
CIRC ACCESSION NO--AP0128781
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128781

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY OF H BONDS WAS ESTD. BY COMPARISON OF THE HEAT OF SOLN. (ΔH) OF 2 ISOMERS, ONE OF WHICH IS CAPABLE OF FORMING H BONDS WITH A MOL. OF THE SOLVENT. THE ΔH VALUES FOR THE PAIRS, M AND O NITROPHENGL, M AND O DIHYDROXYBENZENE AND P AND O CHLOROANILINE, DETD. CHROMATOG. ON THE BASIS OF THE TEMP. DEPENDENCE OF THE RETENTION VOLS. LED TO H BOND ENERGY VALUES OF 3.8, 4.7, AND 1.5 KCAL-MOLE, RESP.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--GAS CHROMATOGRAPHY OF FLUORINATED COMPOUNDS ON POROUS POLYMERS -U-
AUTHOR--(02)-GVOZDOVICH, T.N., YASHIN, YA.I.
COUNTRY OF INFO--USSR
SOURCE--J. CHROMATOGR. 1970, 49(1), 36-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GAS CHROMATOGRAPHY, FLUORINATED ORGANIC COMPOUND,
ACETOPHENONE, PROPANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0978 STEP NO--NE/0000/70/049/001/0036/0039
CIRC ACCESSION NO--AP0136408
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SUITABILITY OF THE WEAKLY SPECIFIC ADSORBENTS CHROMOSORBS 101 AND 102 (BOTH ARE POROUS POLYMERS) FOR THE GAS CHROMATOGRAPHIC SEPN. OF ORG. COMPOS. AND THEIR FLUORINATED ANALOGS IS DISCUSSED. IN GENERAL, THE FLUORINATED COMPOS. ARE ELUTED 1ST. CHROMATOGRAMS AND HEATS OF ADSORPTION ON THE CHROMOSORB COLUMNS AND ON A PORAPAK T COLUMN ARE GIVEN FOR MEQAC, CF SUB3 OAC, PROH, PERFLUOROPROPANOL, N, AMYL ALC., N, PERFLUOROAMYL ALC., ACETOPHENONE, AND P, FLUOROACETOPHENONE. FACILITY: EXPTL. DESIGN BUR. AUTOMAT., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.95

VTOROV, B. G., KALINOVSKIY, V. I., CHULPANOVA, L. V., SHTSHENIN, V. A., and
YASHIN, V. I.

"Some Particulars in the Analysis of Pesticides by a Recombination Rate Constant
Detector"

Tr. 2-go Vses. sovetsk. po issled ostankov pestitsidov i profilakt. nagryas-
naniya imi produktov pitaniya, kornov i vesh. sredy (Works of the Second All-
Union Conference on Investigation of Residues of Pesticides, and Prevention
of Pesticide Contamination of Feedstuffs, and Feeder and the External Environ-
ment), Tallin, 1971, pp 47-50 (from *Khimiya*, No 11, Jun 72, Abstract
No 112404)

Translation: A recombination rate constant detector is used to analyze the
residues of chlorine-containing pesticides in various materials in place
of electron capture detectors. The recombination rate constant detector has
a linear dynamic range of ~ 500 (with respect to lindane), and higher
sensitivity and stability than the electron capture detector.

1/1

USSR

UDC 639.16.07.669:65.011.56

SMOLYAK, V. A., UZLYUK, V. N., Candidates of Technical Sciences,
VASILENKO, V. I., ZELLENIN, V. M., YASHIN, YU. F., Engineers

"Gamma-Relay Level Gage for Automatic Dosage Control"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 5, 1970,
pp 38-39

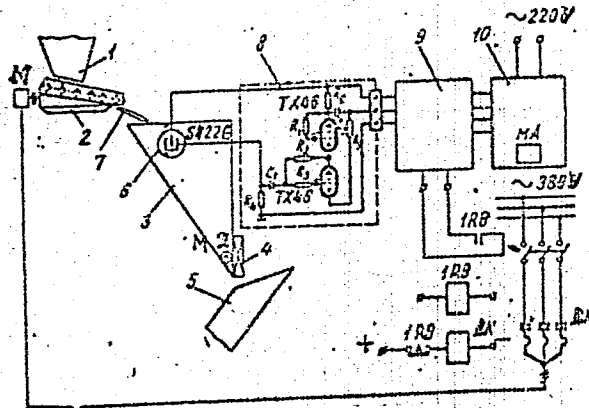
Translation: Volume dosage was applied to a rebuilt furnace of a metallurgical plant since, under the prevalent technical conditions, it was impossible to use a complex of typical equipment and mechanisms for assembling and dosing the coke in mass. Based on a GR-7 radioisotope gamma relay, a system for automatic regulation of coke volume dosage controlling a roller disc screen for sifting coke particles and a main skip hoist (see drawing) was developed.

1/5

- 9 -

USSR

SMOLYAK, V. A., et al., Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39



Automatic Radioisotope Control System for Coke Dosage
and Disc Screen Regulation:

2/5

USSR

SMOLYAK, V. A., et al., Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39

- 1) coke bunker; 2) disc screen; 3) coke hopper;
- 4) gate; 5) skip; 6) radiation detector;
- 7) nozzle for adjusting input coke mass; 8) sensor;
- 9) electronic relay block; 10) control block

The radiation source is in a cast iron collimator container outside the weight hopper 3. at its side wall. The container provides safety from radiation and forms a gamma radiation beam directed toward the detector 6, which uses a SI22G counter in a protective tube 200 mm in diameter and with a wall thickness of two mm in the upper part of the interior of the hopper 3. The placement of the detector inside the object measured, where the radiation by 30-40% the activity of the source and thus reduces the danger of radiation to personnel operating the loading mechanism.

To prevent false operation of the gamma relay and to improve the coke dosage automatic control system, a radiometric pair

3/5

- 10 -

USSR

SMOLYAK, V. A., et al. Moscow, Mekhanizatsiya i Avtomatizatsiya
Proizvodstva, No 5, 1970, pp 38-39

(source and detector) was placed so that the gamma beam, perpendicular to the longitudinal axis of the screen, is not interrupted by the flow until the moment the hopper is filled with a specified amount of coke and its top is hit by the gamma beam.

To adjust the system -- i.e., to change the specified mass within the limits of 100-200 kg -- the pouring nozzle 7 is shifted by 200-300 mm and pulls the top away from the gamma beam to the screen opposite the wall of the hopper, so that the latter is filled with a large quantity of the coke before the screen is switched off. And, conversely, the sideward approach of the top to the vertical plane passing through the gamma beam leads to an earlier intersection of the latter by the top of the coke mass. Consequently, the control of the coke mass within the technical range depends on which of the following interrupts the gamma beam: the top of the poured coke mass or the side slope ascending to the top. In the latter case, the top is higher than the level at which the gamma beam is permitted to pass.

4/5

USSR

SMOLYAK, V. A., Et al., Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 5, 1970, pp 38-39

This control system also contains a sensor, an electronic relay block, and a control block, as well as a low-current control for the electric-feed network of the disc screen.

The control signal from the sensor is applied to the relay of the electron relay block operating in the positive (triggered) position. When the hopper is filled with the specified amount of coke, the gamma beam intensity is weakened to one-third its former level, and contacts IRB of the switch are opened. The coil of IRB is deenergized, the closed contacts IRB in the coil of the linear contactor LK open, and the motor M of the disc screen is switched off. The screen is once more switched on after the gate 4 is opened (motor M2) and the coke is poured from the hopper into the skip 5.

The radioisotope automatic coke dosage regulation systems are based on both coke-loading mechanisms. The annual saving to the economy amounts to 42 thousand rubles.

5/5

USSR

UDC 613.647-07:612.351.11.014.426

YASHINA, L. N., Institute of Labor Hygiene and Occupational Diseases

"The Effect of Pulsed Magnetic Field of Low Frequency on the Activity of Oxidation-Reduction Enzymes in Liver of White Mice (Histological Studies)

Moscow, Gigiyena Truda i Professial'nyye Zabolevaniya, No 2, 1972, pp 53-56

Abstract: Irradiation of mice with pulsed magnetic field (PMF) of 900 oersted 15 times for 3 hr each treatment inhibited considerably the activity of dehydrogenases of succinic, isocitric, malic, and glutamic acids. This was proved by a decreased number of diformasan granules. The nonuniform activity of these enzymes in hepatocytes of different areas of liver is related probably with their different functional activity. A chronic irradiation of mice with PMF of 300 oersted for 1, 3, and 6 months for 90 min. each day did not produce any activity changes of the succinic dehydrogenase in one month. A distinctive decrease in the activity of this enzyme took place after 3 months of irradiation. At the end of 3 months some dystrophic changes occurred in the liver cells, such as a destruction of cell membranes. Individual regions of the liver perenchyma perished altogether at the end of 3 months of irradiation with 300 oersted. The activity of succinic dehydrogenase was not restored 2 months after prolonged irradiation (6 months) with 300 oersted. The intensity in the activity changes of the above enzymes depended in all cases on the magnetic field intensity and duration of the irradiation.

1/1

1/2 013
TITLE--AN INFORMATION CENTER -U- UNCLASSIFIED
PROCESSING DATE--04DEC70
AUTHOR--YASHINA, M.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA GAZETA, SEPTEMBER 1, 1970, P 4, COLS 4-6
DATE PUBLISHED--01SEP70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--INFORMATION CENTER, MEDICAL SCIENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1798
STEP NO--UR/9034/70/000/000/0004/0004
CIRC ACCESSION NO--AN0138745
UNCLASSIFIED

272 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AN0138745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE GIVES A BRIEF DESCRIPTION OF THE OPERATIONS OF THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF MEDICAL AND MEDICAL TECHNICAL INFORMATION OF THE MINISTRY OF PUBLIC HEALTH, U.S.S.R. THE INSTITUTE DISSEMINATES 90,000 BIBLIOGRAPHY CARDS TO ITS SUBSCRIBERS ANNUALLY. THE INSTITUTE ALSO PUBLISHES THE MEDICAL ABSTRACTS JOURNAL. THE INSTITUTE IS HEADED BY ITS DIRECTOR, PROFESSOR S. BAGDASARIYAN.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--19JUN70

TITLE--SCIENTIFIC RESEARCH SHIP VOLNA RETURNS TO VLADIVOSTOK -U-

AUTHOR--YASHINA, N.

COUNTRY OF INFO--USSR, PACIFIC OCEAN, ATLANTIC OCEAN, INDIAN OCEAN

SOURCE--MOSCOW, PRAVDA, 10 JAN 70, P 6

DATE PUBLISHED--10JAN70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RESEARCH SHIP, OCEANOGRAPHIC SHIP, OCEANOGRAPHIC EXPEDITION, OCEAN CURRENT/VOLNA RESEARCH SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1978/0462

STEP NO--UR/9012/70/000/000/0006/0006

CIRC ACCESSION NO--AN0045497

UNCLASSIFIED

Acc. Nr.: AN0045497

Ref. Code: UR 9012

JPRS 49849

Scientific Research Ship "Volna" Returns to Vladivostok

(Complete translation: "Floating Water Bureaus," by N. Yashina; Moscow, Pravda, 10 January 1970, p. 6)

The scientific research ship "Volna" has returned to its port of registration [Vladivostok] after a three-month voyage in the Atlantic, Pacific and Indian Oceans. The Far Eastern scientists obtained valuable information on the Kuroshio Current in the Pacific Ocean. The "Volna" is the first floating weather bureau built by Polish ship builders for our country's Hydro-meteorological Service. [4]

1
1

Reel/Frame
10780462

di
12

172 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--PROPARGYL ETHERS FROM 9,10,DIHYDRO,EXO,DICYCLOPENTADIENE -U-

AUTHOR--(04)-YASHINA, G.G., GAVRILOVA, L.D., RUDNEV, S.A., VERSHCHAGIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. JRG. KHIM. 1970, 6(5), 971-5

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, ALKYNE, AROMATIC HYDROCARBON, ETHER, CARBOXYLIC ACID CHLORIDE, FORMALDEHYDE, BROMINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND, AMINE DERIVATIVE, HYDROGENATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY RELL/FRAME--3006/1119

STEP NO--UR/0368/70/006/005/0971/0975

CIRC ACCESSION NO--AP0134993

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0144993
ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. IN THE PRESENCE OF BF SUB3. ET
SUB2 O, HC TRIPLE BOND CCH SUB2 OH CONDENSED WITH DICYCLOPENTADIENE
GIVING 9,PROPARGYLOXY,9,10,DIHYDRO,EXG,DICYCLOPENTADIENE (I). THE
HYDROGENATION OF I GAVE 9,PROPOXY,I ANALOG. THE REACTION OF I WITH
ACCL GAVE 9,CHLORO ANALOG OF I. I WAS ALSO PREPD. FROM ITS 9 HYDROXY
ANALOG BY THE REACTION WITH BRCH SUB2 C TRIPLE BOND CH IN THE PRESENCE
OF NA. THE CONDENSATION OF I WITH ALKYLAMINES AND HCHO GAVE THE 9,IRR
PRIME NCH SUB2 C TRIPLE BOND CCH SUB2 O, SUBSTITUTED) ANALOG OF I.
FACILITY: INST. NEFTE UGLEKHM. SIN., IRKUTSK, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

YASHKOV, S. F.

"Some Mathematical Models of Time Division Systems"

Moscow, V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Techniques and Programming--collection of works) "Sov. Radio," No 7, 1972, pp 140-149 (from RZh--Matematika, No 8, 1972, Abstract No. 8V641)

Translation: The author considers the principles of the construction of planning algorithms in time division systems (TDS) and investigates TDS models by the methods of queuing theory. Analytic expressions are obtained for determining the average waiting time and response time for various classes of problems in TDS with an arbitrary number of sequences, the time losses in quantizing the servicing being considered. The accuracy of the evaluates given is confirmed through TDS modeling with the SLANG language.

1/1

USSR

UDC: 8.74

YASHKOV, S. F.

"Some Mathematical Models of Time-Sharing Systems"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 140-149 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V641)

Translation: The principles of construction of algorithms for planning in time-sharing systems are considered, and models of time-sharing systems are studied by queuing theory methods. Analytical expressions are derived for determining the average waiting time and response time of problems of different classes in time-sharing systems with an arbitrary number of queues when accounting for losses of time on quantizing of serving. Confirmation is given for the accuracy of the proposed estimates using modeling of time-sharing systems in the SLENG language. Author's abstract.

1/1

USSR

UDC 616.9-036.21-084.4

TER-KARAPETYAN, A. Z., RUNOVA, G. A., and YASHKOVA, S. A., Central Institute of Epidemiology, Moscow

"Indices of Epidemiological Service Rendered to the Population According to Reports of Sanitary Epidemiological Stations"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 39-44

Abstract: Form 36, routinely filled out by all Soviet sanitary epidemiological stations, provides detailed information on a great variety of infectious diseases, especially on trends over a period of years and in different parts of the country. It is helpful in assessing the health status at a given time and in planning preventive measures. Form 36 has three sets of indices. The first applies to individual patients and covers completeness of hospitalization, timeliness of hospitalization, laboratory tests, confirmation of diagnoses, etc. The second set of indices concerns activity in epidemic foci, including frequency of detecting a source of infection, completeness of epidemiological inspection of foci, bacteriological examination of individuals who had contact with sick persons, etc. The third set involves systematic bacteriological examinations of mandatory groups (food handlers, workers in central water supply installations, institutionalized

1/2

USSR

TER-KARAPETYAN, A. Z., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7,
Jul 70, pp 39-44

children). The shortcomings of Form 36 are analyzed, and some suggestions for
improvement are made.

2/2

Steels

USSR

UDC 669.15-194.001.6

BABCHENKO, S. L., KARP, S. F., APTEKAR', N. M., YASHNAYA, G. V., and D'YACHENKO, A. Z.

"Effect of Nickel on the Impact Toughness of G13L Steel During Explosion Hardening"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4, Jul-Aug 70, pp 40-41

Abstract: A study was made of the effect of nickel additions on the impact toughness of G13L steel in the temperature range from +20 to -40°C after explosion hardening. The impact toughness of the standard metal before explosion hardening was 21.8 kg/cm²; the nickel-alloyed metal had an impact toughness of 22.7 kg/cm². Explosion hardening produced work hardening through the entire thickness of the metal. The hardness reached 33-35 RC, the reduction in thickness was up to 1 mm (initial thickness 11 mm). Impact toughness was significantly decreased, although G13L steel alloyed with nickel retains plasticity to a greater extent than steel of the standard composition. At -40°C, the impact toughness of the standard steel is sharply reduced after explosion hardening, whereas the nickel-
1/2

USSR

BABCHENKO, S. L., et al, Metallurgicheskaya i Gornorudnaya Promyshlennost',
No 4, Jul-Aug 70, pp 40-41

alloyed steel shows only a slight decrease in impact toughness at this
temperature.

2/2

- 45 -

Thin Films

USSR

UDC 539.216.2

BELEVSKIY, V. P., BELOUS, M. V., PERMYAKOV, V. G., YASHNIK, V. M., Kiev Poly-
technic Institute imeni V. I. Lenin

"Electrophysical Properties and Phase Composition of Tantalum Thin Films
Made by Cathode Sputtering"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp
564-570

Abstract: It is shown that thin films of tantalum made by cathode sput-
tering in argon may consist of crystals of α -Ta, β -Ta, or a mixture of the
two, depending on the conditions of condensate formation. The electrophysical
properties and structures of tantalum α - and β -phases are investigated. The
resistivity of the β -modification of tantalum was found to be 160-190 $\mu\Omega\cdot\text{cm}$,
and the temperature coefficient of resistance -- $200\cdot 10^{-6} \text{ deg}^{-1}$ in 200 nm
and 20 nm films. A $\beta \rightarrow \alpha$ phase transformation takes place at 700-750°C in
a vacuum of the order of 10^{-6} - 10^{-5} mm Hg, accompanied by an appreciable
change in the electrophysical properties of the films. In the case of very
thin films (20 nm) interaction with residual gases lowers the $\beta \rightarrow \alpha$ trans-
formation temperature to 600-650°C.

1/1

USSR

UDC 621.373.826

PAK, G. T., PETROV, A. I., FAYBOYM, YE. G., CHERHOUSOV, N. P., SHVEYKIN, V. I.,
YASHUMOV, I. V.

"Internal Parameters of Injection Lasers at 300° K"

V sb. Kvant. elektronika (Quantum Electronics-- collection of works), Moscow,
No 5, 1971, pp 99-101 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D350)

Translation: The results of experimental studies of the basic parameters of the active zone of injection lasers based on diffusion and epitaxial p-n-transitions and heterotransitions in the GaAs-AlAs system are described. It is demonstrated that heterolasers with two-sided limitation have better characteristics: the specific amplification coefficient is 10^{-2} cm/amp, the inversion current density is 2.1 kiloamps/cm², and the losses are 26 cm⁻¹. There is 1 illustration and a 6-entry bibliography.

1/1

USSR

UDC 621.378.35

GORBYLEV, V.A., PAK, G.T., PETROV, A.I., CHERNOUSOV, N.P., SHVEYKIN, V.I.,
YASHENOV, I.Y.

"Dependence Of Threshold Of Generation Of Injection Lasers On The Duration Of
The Pulses Of The Pumping Current"

Kvantovaya elektronika, Moscow, No 5, May 71, pp 97-99

Abstract: The dependence is experimentally studied of the threshold of generation of injection lasers with diffused and heterogenous junctions in the system GaAs-AlAs on the duration of the pulses of the pumping current in the interval 2--100 nsec. The magnitudes are determined of the effective lifetimes of the injected electrons for three types of laser diodes: with diffused p-n junction (~ 1 nsec), with one heterojunction (~ 2.5 nsec) and with two heterojunctions (3--6 nsec). The nanosecond pulses of the pumping current in the 2--100 nsec range with a building up front less than 1 nsec were shaped with the aid of a TG11-6/1 thyatron and dispersed delay lines. The pulse repetition frequency was regulated from 100 Hz to 10 kHz. Received by editors, 22 May 71; after revision, 6 May 71. 2 fig. 1 tab. 6 ref.

1/1

- 90 -

USSR

UDC 621.375.82

BORODULIN, V. I.; MALYAVKINA, G. M., PAK, G. T., PETROV, A. I., CHERNOUSOV,
N. P., SHVEYKIN, V. I., YASHUMOV, I. V.

"Some Properties of Degradation of Heterolasers"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Mos-
cow, Soviet Radio, 1972, pp 108-110 (from RZh-Fizika, No 12, Dec 72, Abstract
No 12D977)

Translation: An experimental study was made of the catastrophic and slow degradation of heterolasers. It was demonstrated that catastrophic degradation occurs for average light energy flux densities $(2-4) \cdot 10^6$ watts/cm² and local densities of 10^7 watts/cm². Depending on the light energy flux density the service life of the heterolasers can vary from several minutes to 100 hours and more; catastrophic degradation in this case is the limiting case of slow degradation under the effect of radiation. Heterolasers with a radiation power in the pulse of > 10 watts, a frequency of 6 kilohertz, and a pulse duration of 100 nanoseconds are capable of operating more than 100 hours without a significant reduction in power.

1/1

USSR

UDC 669.71.053.4.094

TIKHONOV, N. N., YASHUNIN, P. V., BENESLAVSKIY, S. I., and BYKOV, A. B.

"Solubility of Aluminum Hydroxide from Bauxites of Various Mineralogical Types in Alkaline-Aluminate Solutions"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrokn. prom-sti
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 35-42 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G139)

Translation: The solubility of $Al(OH)_3$ from hydrargillite and bemite bauxites in alkaline-aluminate solutions was studied under conditions close to industrial. The solubility of natural hydrargillite and bemite differs somewhat from the solubility of these minerals obtained under artificial conditions. There is some variation of solubility as a function of the perfection of the crystals within the limits of the same crystalline modification. Approximate values of the calculated modulus are presented for leaching of hydrargillite and bemite bauxites under various conditions. 1 illustration, 4 tables, and 8 bibliographic references.

1/1

I/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--VIXCOSES AND VISCOSE FIBERS FROM LOW SUBSTITUTED CARBOXYMETHYL
CELLULOSE -U-
AUTHOR--(03)-YASHUNSKAYA, A.G., KONDOVALOVAY, YE.M., MOGILEVSKIY, YE.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLDKNA 1970, (1), 24-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--RAYON, CELLULOSE RESIN, CARBON DISULFIDE, SYNTHETIC RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1821 STEP NO--UR/0183/70/000/001/0024/0027
CIRC ACCESSION NO--AP0100395
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100395

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSE (I) FIBERS PREPD. FROM A CM. CELLULOSE (II) WITH A LOW DEGREE OF SUBSTITUTION EXHIBITED SUPERIOR FILTERABILITY, WHICH REDUCED THE CONSUMPTION OF CS SUB2 DURING XANTHATION. INTRODUCTION OF A SMALL NO. OF II GROUPS AFFECTED THE STRUCTURE AND THE PHYSICOMECH. PROPERTIES OF I FIBERS. THUS, THE PHYSICOMECH. PROPERTIES OF I YARN MARKEDLY DETERIORATED, ALTHOUGH THE STRUCTURE AND THE PROPERTIES OF A CORD FIBER WERE ESSENTIALLY UNCHANGED, WHEREAS THE STRUCTURE OF A POLYNOSIC FIBER DETERIORATED AND ITS RESISTANCE TO ALKALI DECLINED.

UNCLASSIFIED

USSR

UDC 547.836.3.07

TISHCHENKOVA, I. F., KHOLODOV, L. Ye., and YASHUNSKIY, V. G., All Union Scientific Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Quinindines. IV. Synthesis and Properties of 3-Acyl Derivatives of 4-Methyl-1,2-dihydro-4H- β -quinindines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 87-90

Abstract: β -Quinindane methyl iodide when treated with excess aqueous base gave 1,2-dihydro-4H- β -quinindine (I) which without isolation was extracted with ether and treated with respective acyl chlorides in presence of aqueous base to give solid 3-acyl derivatives of (I). The ketones formed are brightly colored compounds, very stable, easily purifiable. Acylation can also be carried out in acetone-triethylamine mixture. When treated with acids these ketones convert to quarternary salts losing their bright colors. IR absorption maxima are reported for the synthesized materials. In the UV all absorption maxima are shifted towards longer wavelength.

1/1

UDC 547.832:542.944.938

USSR

KHOLODOV, L. Ye., SYROVA, G. P., and YASHUNSKIY, V. G., All Union Scientific
Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Quinindine. VI. Investigation of Bromination in the β -Quinindane Series.
Synthesis of 3H- β -Quinindane System"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 96-101

Abstract: Bromination of β -quinindane and β -quinindane-9-carboxylic acid in
glacial acetic acid at 50-60° yields tribromo- and tetrabromo-substituted
1H- and 3H- β -quinindenes. When β -quinindene tribromide is hydrolyzed with
silver nitrate solution it yields 1-bromo-3H- β -quininden-3-one; when H₂SO₄
is used in hydrolysis -- a rearrangement occurs with formation of 1,2-dibromo-
3H- β -quininden-3-one. Possible mechanism of formation of the reaction pro-
ducts is discussed. IR, UV, and PMR spectral data are reported. This ap-
pears to be the first synthesis of a novel heterocyclic system of 3H- β -
quinindene.

1/1

USSR

UDC 547.836.3.07:541.67:543.422.4.6

TISHCHENKOVA, I. P., KHOLODOV, L. Ye., and YASHINSKIY, V. G., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Quinindines. VII. Study of the Synthetic Routes of β -Quinindene"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 102-107

Abstract: Various approaches to the synthesis of β -quinindene (I) are discussed. Rearrangement of acetic anhydride of β -quinindane-N-oxide followed by hydrolysis and dehydration gives a dimer of (I). (I) can be obtained by dehydrobromination of 3-bromo- β -quinindane (II) which could be synthesized by converting β -quinindane to a 3-lithium derivative and reacting it with cyanogen bromide at -15° . Dehydrobromination of (II) was achieved by heating it in dimethylformamide for 30 min on a steam bath in presence of triethylamine. (I) is very unstable; it dimerizes in acid medium and on heating. PMR data indicated that the product, in spite of giving only a single spot on the TLC plates, actually represented a mixture of 1H- and 3H- β -quinindene.

1/1

- 36 -

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT71
TITLE--SYNTHESIS AND THE INVESTIGATION OF SOME 4H-BETA-QUININDINES, THE
HETEROCYCLIC ANALOGS OF AZULENE -U-
AUTHOR--(03)--KHOLDOV, L.E., TISHCHENKOVA, I.F., YASHUNSKIY, V.G.
COUNTRY OF INFO--USSR
SOURCE--TETRAHEDRON LETT. 1970, (18), 1535-8
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, CHEMICAL SYNTHESIS, MOLECULAR
STRUCTURE, IODINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND,
AROMATIC KETONE, AMINE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1182 STEP NO--UK/0000/70/000/018/1535/1538
CIRC ACCESSION NO--AP0126784
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126784

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

4-METHYL,1,2,DIHYDRO,4H,BETA,QUININDINE (I) IS TREATED WITH BZCL OR
PHNCO TO GIVE II AND III, WHICH ARE TREATED WITH CHLORANIL TO GIVE IV
AND V, RESP. II IS TREATED WITH HI TO GIVE VI; SIMILARLY PREPD. IS
VII.
FACILITY: S. ORDZHONIKIDZE ALL UNION CHEM PHARM. SCI. RES.
INST., MOWCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

1/2 C15

TITLE--SYNTHESIS, PHARMACOLOGICAL PROPERTIES, AND EFFECT OF SOME SYNDROME
IMINES OR MONAMINE OXIDASE ACTIVITY -U-

AUTHOR--(001)-YASHUNSKIY, V.G., MASHKOVSKIY, M.D., GURKIN, V.Z., KOLODNOV,
L.L., ALTSHULER, R.A.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TEKSTOL. (MOSCOV) 1970, 33(3), 297-302

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CENTRAL NERVOUS SYSTEM STIMULANT, CHEMICAL SYNTHESIS, DRUG
EFFECT, OXIDASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO--F07C/005001/F10 STEP NO--UR/0090/70/011/003/0297/0302

CIRC ACCESSION NO--AP0139586

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NO. OF 3-PHENYLALKYL DERIVS. OF
SYDNONE IMINE, WHEN GIVEN TO MICE, STIMULATED THE CENTRAL NERVOUS SYSTEM
AND ACTED AS PERIPHERAL ADRENOMIMETICS. THEY ALSO INHIBITED MONDAMINE
OXIDASE IN VITRO. FACILITY: VSES. NAUCH.-ISSLED. KHIM.-FARM.
INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

1/3 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--QUININDENES. I. SYNTHESIS OF 2,3, DIHYDRO, BETA, QUININDENES (BETA
QUININDANES) BY THE PFITZINGER REACTION -U-
AUTHOR--(04)-KHOLODOV, L.YE., SYROVA, G.P., YASHUNSKIY, V.G., SHEYNKER,
YU.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 78-82
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--UV SPECTRUM, IR SPECTRUM, NMR SPECTRUM, CHEMICAL SYNTHESIS,
QUINOLINE, POLYNUCLEAR HYDROCARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1171 STEP NO--UR/0409/70/000/001/0078/0082
CIRC ACCESSION NO--AP0054071
UNCLASSIFIED

2/3 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054071

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUX OF 50 G OF ISATIN WITH 85 G CYCLOPENTANONE IN A MIXT. OF 400 ML ETOH AND 200 ML 33PERCENT AQ. KOH 8.5 HR FOLLOWED BY VACUUM DISTN. OF THE ETOH AND PART OF THE H SUB2 O, DILN. WITH 800 ML H SUB2 O AND EXTN. WITH 300 ML CH SUB2 CLCH SUB2 CL, AFFORDED AN ORG. LAYER WHICH WAS CHARCOAL PURIFIED, DRIED AND VACUUM EVAPD. THE RESULTING OIL WITH PETROLEUM ETHER YIELDED 8.5 G ALPHA, ALPHA PRIME DICYCLOPENTYLIDENECYCLOPENTHANONE, M. 78-80DEGREES (PERTROLEUM ETHER). THE AQ. LAYER, AFTER THE CH SUB2 CLCH SUB2 CL STEP, WAS TREATED WITH ACTIVATED C, ADJUSTED TO PH 6 WITH GLACIAL HOAC AND COOLED. THE PPT. AFTER H SUB2 O WASHING WAS EXTD. WITH ME SUB2 CO (5 TIMES 100 ML), EVAP. TO DRYNESS TO YIELD 16 G OF THE 3,CYCLOPENTYLIDENE, BETA, QUININDANE, O, CARBOXYLIC ACID, MONOHYDRATE (I), M. 113-15DEGREES (DECOMPN.) (60PERCENT OF ETOH). DRYING I (3 HR OVER P SUB2 O SUBS (75DEGREES, 15 MM) YIELDED THE ANHYD. ACID (II) M. 198-200DEGREES (DECOMPN.); HYDROCHLORIDE M. 190-2DEGREES (DECOMPN.). TREATMENT OF AN AQ. MEOH SOLN. OF I WITH AN ET SUB2 O SOLN. OF CH SUB2 N SUB2 O YIELDED THE ME ESTER, M. 135-6DEGREES (MEOH). THE RESIDUE AFTER THE ME SUB2 CO EXTN. IS 45 G (EQUATION SHOWN ON MICROFICH) BETA, QUININDANE, 9, CARBOXYLIC ACID (III), M. 280-2DEGREES (DECOMPN.); HYDROCHLORIDE M. 240DEGREES (DECOMPN.) (ETOH). A SOLN. OF 1.50 G I IN 30 ML GLACIAL HOAC WAS HYDROGENATED OVER 0.15 G OF PD-C AT ATM. PRESSURE 5 HR AT 45-50DEGREES. AFTER CATALYST REMOVAL AND DILN. WITH H SUB2 O, THE RESULTING PPT. WAS EXTD. WITH ET SUB2 O, THE ET SUB2 O, SOLN. H SUB2 O WASHED, AND THE SOLVENT VACUUM EVAPD.

UNCLASSIFIED

3/3 019

CIRC ACCESSION NO--A0054071

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--THE RESIDUE WAS MIXED WITH WATER FILTERED TO YIELD 0.8 G
 3, CYCLOPENTYL, BETA, QUININDANE, 9-CARBOXYLIC ACID (IV), M. 24 DEGREES
 (DECOMPN.) (ETOH). A MIXT. OF 5 G II, 1.7 G ANHYD. NAOAC AND 30 ML
 GLACIAL HOAC WAS TREATED OVER 1 HR AT 10 DEGREES WITH 1.4 G BR IN 5 ML
 GLACIAL HOAC AND STIRRED 1 HR AT ROOM TEMP., AND THE PPT. FILTERED AND
 WASHED WITH H SUB2 O AND ME SUB2 CO TO GIVE 5.1 G
 3, BROMO, 3, (1, BROMOCYCLOPENTYL), BETA, QUININDANE, 9, CARBOXYLIC ACID (V), M.
 115-18 DEGREES (DECOMPN.), AFTER PPTN. FROM ME SUB2 NCHO SOLN. BY ADDN.
 OF H SUB2 O. IR, UV AND NMR DATA ARE GIVEN. FACILITY: VSES,
 NAUCH.-ISSLED. KHIM.-FARM. INST. IM. ORDZHONIKIDZE, MOSCOW USSR.

UNCLASSIFIED

USSR

UDC: 8.74

BULOVAS, V. V., YASINEVICHUS, R. Yu.

"Results of an Experimental Digital Computer Study of an Algorithm"

V sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of works), Kaunas, 1971, pp 572-576 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1043)

Translation: The paper presents the results of an experimental study of an algorithm for minimizing a linear functional. The linear programming problem is solved by the gradient method. In order to determine the maximum of the linear functional, a certain function is formed, and the maximum is then found by moving along this function. The Pine method is used in solving the problem. The equations are discretized for digital computer realization of the algorithm. The described algorithm was checked out on the "Razdan-3" computer. Experimental results are given. T. Alek-perov.

1/1

USSR

UDC: 8.74

KILDA, B. Yu., YASINEVICIUS, R. Yu.

"Concerning Analog Computer Realization of a Dynamic Classification Algorithm"

V. sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of works), Kaunas, 1971, pp 577-583 (from RZh-Kibernetika, No 1, Jan 72, Abstract No LV1100)

Translation: The paper describes block diagrams of analog or hybrid computers for realizing three algorithms of dynamic linear classification of sources of continuous signals representable by certain realizations of a given length. Authors' resumé.

1/1

USSR

UDC: 911.3.616.927(575.3)

YASINSKIY, A. B.

"Division of the Rural Agricultural Tadzhik SSR into Natural Complexes Defining Characteristics of the Epidemiological Process and Prophylactic Measures for Typhoid"

V sb. Materialy XV Vses. s'ezda epidemiologov, mikrobiologov i infektsionistov, Tezisy Dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Diseases, Reports of Theses, Part I--collection of works) Moscow, 1970, pp 279-280 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.251 by V. Maslovskaya)

Translation: The area was divided into types including the following categories: the character of the water supply for drinking and agricultural purposes; indices for pollution of water supply by agriculture and human wastes; and the character of water use in irrigated and dry farming agriculture. Eight regional types were defined in agricultural areas where the natural agricultural complexes determine the conditions for the typhoid epidemiological process.

1/1

USSR

UDC: 621.372.54

YASINSKIY, I. M. and OSIPOV, V. G.

"Designing Band Piezoelectric Filters"

Sb. tr. Nauchno-tekhn. konferentsii prof.-prepodavat. sostava
Vses. zauchn. elektrotekhn. in-ta svyazi (Collected transactions
of the Scientific Technical Conference of the Professorial-
Instructor Staff, All-Union Correspondence Electrical Engineering
Communication Institute) No. 5, Moscow, 1970, pp 94-101 (from RZh-
Radiotekhnika, No. 3, March 71, Abstract No. 3A193)

Translation: A method of design by operating attenuation, based on
the use of a preliminary computation of a low-frequency prototype,
is explained. It is shown that the latter can be realized in the
form of a bridge filter with parallel coils and piezoelectric re-
sonators, or in the form of a differential bridge system. Two il-
lustrations, bibliography of two. N. S.

1/1

USSR

UDC 518.5:681.3.06

KRISILOV, A. D., YANENKO, V. M., POPOV, A. A., YASINOVSKIY, M. A., SAPRYGIN, V. G.

"The Problem of Algorithmization of the Differential Diagnosis of Rheumatism"

Kibernet. i Vychisl. Tekhn. Resp. Mezhd. Sb. [Cybernetics and Computer Engineering, Republic Interdepartmental Collection], No 7, 1970, pp 102-107, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V641 by the authors).

Translation: A list of characteristics is suggested for description of diseases being diagnosed, including, in addition to the symptoms, certain intermediate diagnostic information. The applicability is demonstrated and certain altered statistical decision rules are calculated by computer. Results are presented from machine differential diagnosis of five diseases and the direction of further work is noted.

1/2 013
UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AUTOMATIC STRAIGHTENING AND CUTTING MACHINE -U-
AUTHOR--(05)-BLINOV, V.P., YASINSKIY, YU.G., POLYARIN, YU.N., CHEREPANOV,
YU.B., NAZAROV, V.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 238517
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NO 10
DATE PUBLISHED--31JUL70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--PATENT, AUTOMATIC CONTROL SYSTEM, CUTTING TOOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0836 STEP NO--UR/0482769/000/000/0000/0000
CIRC ACCESSION NO--AA0114932
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--09DCT70

CIRC ACCESSION NO--AA0114932

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

ABSTRACT. AUTOMATIC STRAIGHTENING AND CUTTING MACHINE CONTAINS CUTTING MACHANISMS 1 AND 2 WITH MOBILE BLADES, MECHANISMS FOR STRAIGHTENING, ROD DELIVERY AND REMOVAL OF CUT OFF DETAILS. IN ORDER TO INCREASE EFFICIENCY WHEN FIXING IT AFTER THE PRESS WHICH PERFORMS SIMULTANEOUS PRESSING OF A ROW OF PARALLEL RODS, THE MACHINE HAS SEVERAL MECHANISMS FOR STRAIGHTENING, DELIVERY, CUTTING AND REMOVAL OF CUT OFF DETAILS, SITUATED IN PARALLEL. THE MECHANISMS ENABLE THE MOVEMENT OF THE DETAILS TO A VIBROPLATFORM (16) WHICH IS SITUATED UNDER THE MECHANISMS. THE VIBRO PLATFORM HAS A DEBALANCING DRIVE (18) AND HAS TWO PAIRS OF INCLINED GUIDES WHICH ARE SITUATED ONE ABOVE THE OTHER. IN THE CLEARANCE BETWEEN THE UPPER GUIDES WHICH FORM A HOPPER, A TURNING SLIDE IS FIXED. THE SLIDE HAS TWO FIXED POSITIONS AND DIVIDES THE DETAILS INTO TWO STREAMS WITH THE HELP OF THE LOWER GUIDES. THE MOBILE BLADE (17) OF THE CUTTING MECHANISM (1) IS FIXED ON A COUPLING ROD (11) WHICH PERFORMS REVERSE FORWARD MOTION AND IS AFFECTED BY A SPRING (12). THE SPRING CREATES ADDITIONAL EFFORT DURING CUTTING AND PROVIDES A REDUCTION IN INERTIAL FORCES DURING THE REVERSE STROKE.

FACILITY: TSENTRAL'NYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TARY I
UPAKOVKI.

UNCLASSIFIED

1/2 014
UNCLASSIFIED
TITLE--USE OF CERTAIN ACTIVATORS FOR THE DETERMINATION OF TRACE AMOUNTS OF
SILVER BY A KINETIC METHOD -U-
AUTHOR--(02)--YASINSKIYENE, E., RASEVICIUTE, N. PROCESSING DATE--30OCT70
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM 1970, 25(3), 458-60
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TRACE ANALYSIS, SILVER, CATALYTIC OXIDATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1904 STEP NO--UR/0075/70/025/003/0458/0460
CIRC ACCESSION NO--AP0118866
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118866

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDN. OF CERTAIN AZO DYES BY
K SUB2 S SUB2 O SUB8 IS CATALYZED BY AG. THE SENSITIVITY OF THE
CATALYTIC OXIDN. OF DIRECT GREEN AT PH 9.0-9.2 INCREASES FROM 1 TIMES 10
PRIME NEGATIVE1 MUG AG-ML WITHOUT AN ACTIVATOR TO 5 TIMES 10 PRIME
NEGATIVE4 MUG AG-ML IN THE PRESENCE OF ETHYLENEDIAMINE AND TO 2 TIMES 10
PRIME NEGATIVE4 MUG AG-ML IN THE PRESENCE OF TRIETHYLENETETRAMINE
SULFATE. THE METHOD WITH ETHYLENEDIAMINE WAS USED FOR THE DETN. OF THE
SOLY. OF AG PLATE IN H SUB2 O. FACILITY: VILNIUS STATE UNIV.,
VILNIUS, USSR.

UNCLASSIFIED

Plant Pathology

USSR

UDC 632

BEKKER, E. E., DOVLETNURADOV, I. D., PUSHKAREVA, I. D., POLETAYEVA, V. F.,
SHILINA, S. G., and YASAKOVA, E. I., Institute of Botany, Academy of Sciences
Turkmen SSR

"The Nature and Biosynthesis of the Toxin of Fusarium Wilt Pathogen, the
Mechanism of Its Action, and Its Possible Transformation in the Cotton
Plant"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, Sep/
Oct 71, pp 749-754

Abstract: Analysis of purified extracts of *Fusarium oxysporum* f. *vasinfectum*
culture liquid confirmed that the toxin of fusarium wilt of the fine-
fibred cotton plant is fusaric acid. The severity of wilt depends mainly
on the rate of production of fusaric acid by the pathogen. Biosynthesis of
this toxin appears to proceed through formation of tryptophan and is inhibited
by substances participating in transmethylation, such as cobalt or methionine.
Plant resistance is augmented in the presence of cobalt, vitamin B₁₂, and
pyridine alkaloids, and is considerably reduced in the presence of thiamine.
The mechanism of action of fusaric acid probably involves competition between
the product of its decarboxylation, β -n-butylpyridine, and dehydrogenase co-
factors. Immunity may be due to detoxification of fusaric acid through its
transformation into methionine

1/1

YASKELYAYNEN, E. I.

EQUILIBRIUM RATIO OF LOWER TITANIUM CHLORIDES IN A MEDIUM OF MELTED SODIUM AND POTASSIUM CHLORIDES

UDC 669.295

Article by R. A. Sandberg, E. I. Yaskelyaynen, and L. I. Ivanov, Leningrad Metallurgical Institute, Department of Refractories of Light and Dark Metals; Otdel'nyy Zavod Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 6 February 1971, pp 50-61

Equilibrium of the reaction $2TiCl_3 + TiCl_4 \rightleftharpoons 3TiCl_2$ in a medium of chlorides of alkali and alkali-earth metals has been studied by many investigators using both thermal [1-7] and electrochemical methods [8, 9]. The data from different investigators often do not agree. This concerns mainly the influence on equilibrium of those very important parameters such as temperature and total concentration in the titanium melt.

The basic research on investigating equilibrium has been done on the basis of low-concentration titanium-containing melts relative to the conditions of electrolytic production and refining of titanium. The data in these investigations, which are in accord, indicate that with transition from melts on a base of NaCl to melts on a base of CsCl the equilibrium is shifted to the left; addition of chlorides of alkali-earth metals to melts of alkali metals shift the equilibrium to the left. The investigations of equilibrium in high-concentration melts [1] did not permit determining any definite relationships.

At the present time, of greatest practical significance is the use of high-concentration melts in the two-stage sodium-thermal method for production of high-purity metallic titanium [10], and in the metal-thermal refining of titanium [11] and other wastes. The most widely used technologically acceptable salt medium in carrying out such processes is NaCl or KCl, as well as the spent electrolyte.

The composition of the spent electrolyte in weight percent is: 76-79 KCl, 12-14 NaCl, 6-8 KCl₂, 1-2 CaCl₂.

TPRS 55 TRD
4 May 72
-1-

YASKEL YAYNEN, E. I.

EQUILIBRIUM RATIO OF LOWER TITANIUM CHLORIDES IN A MEDIUM OF MELTED SODIUM AND POTASSIUM CHLORIDES

UDC 669.295

3PR 5-5880
41MAY-72

Article by E. A. Sandler, E. I. Yaskel'yan, and E. I. Ivanov, Leningrad Metals Institute, Department of Hot-Chamber Refining of Light and Heavy Metals; signed to press 6 February 1971, pp 60-64]

Equilibrium of the reaction $2TiCl_3 + Ti \rightleftharpoons 3TiCl_2$ in a medium of chlorides of alkali and alkali-earth metals has been studied by many investigators using both thermal [1-7] and electrochemical methods [8, 9]. The data from different investigators often do not agree. This concerns mainly the influence on equilibrium of those very important parameters such as temperature and total concentration in the titanium melt.

The basic research on investigating equilibrium has been done on the basis of low-concentration titanium-containing melts relative to the conditions of electrolytic production and refining of titanium. The data in these investigations, which are in accord, indicate that with transition from melts on a base of LiCl to melts on a base of CsCl equilibrium is shifted to the left; addition of cerium to alkali-earth metals to melts of alkali metals shifts the equilibrium to the left. The investigations of equilibrium in high-concentration melts [1] did not permit determining any definite relationships.

At the present time, of greatest practical significance is the use of high-concentration alloys of metallic titanium-thermal method for production of high-quality titanium [10], and in the metallurgical refining processes is thermally acceptable salt medium in carrying out such processes as NaCl or KCl, as well as the spent electrolyte. The composition of the spent electrolyte in weight percent is: 76-79 KCl, 12-14 NaCl, 6-8 HfCl₄, 1-2 CaCl₂.

USSR

UDC: None

VORONTSOV, V. A., GRUDNISTYY, V. V., KAMEKO, V. F., KOSHELENKO,
V. V., REZNICHENKO, Yu. T., and YASKEVICH, E. P.

"Device for Determining the Coordinates of an Aerodynamic Shadow
Contour on Bodies of Complex Form in Free Molecular Flux"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye
znaki, No 27, 1971, p 141, No (11)351113

Abstract: A parallel light beam is used to model the flux such that
the model can be fixed in any position. For ease of adjustment,
there is a manual indicator showing a thread tied to a movable
carriage. The scale of this indicator is used to measure the co-
ordinates of points difficult of access. A diagram of the device
is shown.

1/1

- 183 -

1/2 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--CONFORMATION TRANSITIONS OF PROTEINS IN INTACT CELLS -U-

AUTHOR--(04)--KGNEV, S.V., CHERNITSKIY, YE.A., MAZHUL, V.M., YASKEVICH, V.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(1), 68-71

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FROG, GASTROINTESTINAL SYSTEM, CELL PHYSIOLOGY, PEPTIDE,
MOLECULAR BIOLOGY, FLUORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0934

STEP NO--UR/0250/70/014/001/0068/0071

ERIC ACCESSION NO--AT0105803

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 029

CIRC ACCESSION NO--AT0105803
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPTS. WERE PERFORMED ON THE
CILIARY EPITHELIAL CELLS OF ESOPHAGUS IN RANA TEMPORARIA. THE
CONFORMATIONS OF THE PROTEINS WAS DETD. BY A SPECTRAL LUMINESCENCE
METHOD. THE INDICATOR OF FUNCTIONAL ACTIVITY OF CELLS HAS THE MOTILITY
RATE. SHARP CHANGES IN THE ACTIVATION ENERGY OF THE CELL MOTILITY IN
THE TEMP. INTERVAL 3-9DEGREES WERE FOUND. THE CHANGES AND SIGMOID
CHARACTER OF THE CURVE λ_{SUBMAX} EQUALS $f(T)$ IN THE INTERVAL
11-3DEGREES DUE TO INVERSE CONFORMATION TRANSITION A IN EQUILIBRIUM B IN
EQUILIBRIUM C AND PRONOUNCED CHANGES OF THE ENTHALPY (120 KCAL-MOLE)
WERE OBSD. THESE FACTS POINT TO THE GENERAL CHARACTER OF TRANSITION
INFLUENCING THE GREATEST PART OF POLYPEPTIDE CHAINS OF MACROMOLS. AND
EVEN ITS ENVIRONMENT. THE SHORT WAVE CHARACTER OF THE SHIFT OF PROTEIN
SPECTRAL FLUORESCENCE AT A TEMP. OF 3-11DEGREES IS FOUND BECAUSE THE A
CONFORMATION CONTAINS MORE HYDROPHOBIC TRYPTOPHAN RESIDUES IN A NONPOLAR
AMINO ACID ENVIRONMENT THAN CONFORMATION B EXISTING AT A HIGHER TEMP.
(10-20DEGREES).
FACILITY: LAB. BIOFIZ. IXOTOP., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 621.039.84

TYUFYAKOV, N. D., SHTAN', A. S., YASKEVICH, V. S., KOZLOV, A. G.,
and PAVLOVICH, V. YE.

"Spectral Characteristics of Neutron Sources Based on Pu²³⁸"

Prikl. Yadern. Spektroskopiya (Applied Nuclear Spectroscopy --
collection of works), No 1, Moscow, Atomizdat Press 1970, pp 24-
27 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971,
Abstract No 3.50.138)

Translation: A single-crystal fast neutron scintillation spectro-
meter was used in combination with a 512-channel amplitude
analyzer to measure the spectra; discrimination of the γ back-
ground was based on the time of scintillation of a stilbene
crystal. The spectrometer was calibrated for the γ radiation of
of the isotopes Cs¹³⁷ and Zn⁶⁵. In subtracting the background,
the shadow cone from a mixture of paraffin and boron carbide was
used. During measurements, the neutron source and detector were
placed at a distance of about 2 m from the walls of the room.
The results of investigations confirmed the expediency of using
Pu²³⁸ to study isotope α_n sources. The advantages of these
1/2

USSR

TYUFYAKOV, N. D., et al., Prikl. Yadern. Spektroskopiya, No 1, Moscow, Atomizdat Press 1970, pp 24-27 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.138)

sources are felt primarily with a yield of 10^7 - 10^8 n/sec⁻² and more. It is assumed that the production of intermetallic compounds of Pu²³⁸ with the target material allows the yield of neutrons per unit mass of α radiator to be increased by several times in comparison with the sources studied. 2 figures, 5 biblio. refs.

2/2

- 58 -

USSR

UDC 621.039.51

PONOMAREV, YE. G., TYUFYAKOV, N. D., SHTAN', A. S., and
YASKEVICH, V. S.

"Study of Formation of Neutron Beams From Isotope Neutron Sources"

Tr. VNII Radiats. Tekhn. (Works of All-Union Scientific Research Institute for Radiation Equipment), No 5, 1970, pp 98-103 (from Referativnyy Zhurnal-Yadernyye Reaktor, No 3, 1971, Abstract No 3.50.75

Translation: Experimental studies were performed into the influence of individual factors on beam characteristics. The measurements were performed in a water tank (1000 mm diameter, 1200 mm high) with two sources ($Pu^{238} + Be$ and Cf^{252}), having different fast-neutron energy spectra. In order to reduce the perturbations of the neutron flux, the source and collimator holders were made of organic glass, while the collimators themselves were made of paper soaked in paraffin or of steel pipe with a wall thickness of 0.1 mm. Neutron flux measurements were performed using indium foils as well as a scintillation counter with an $LiI(Eu)$ single crystal enriched to 90% Li^6 (crystal diameter 30 mm, thickness 4.4 mm). 4 figures, 8 biblio. refs.
1/1

1/2 023
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--REACTION OF SODIO ACETOACETIC ESTER WITH TRANS,2,BUTENE OXIDE AND
OF SODIUM BENZOYLACETIC ESTER WITH PROPYLENE OXIDE AND TRANS,2,BUTENE
AUTHOR--(04)--TEMNIKOVA, T.I., MARKINA, G.V., BORODAVKO, V.A., YASKINA, N.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 739-43
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTONE, IR SPECTRUM, MAGNETIC RESONANCE, ORGANOSODIUM
COMPOUND, ACETATE, ORGANIC OXIDE, MOLECULAR STRUCTURE
CONTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1953
STEP NO--UR/0366/70/006/004/0739/0743
CIRC ACCESSION NO--AP0125542
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTIONS GAVE
ALPHA, ACETYL, BETA, GAMMA, DIMETHYL, GAMMA,
BUTYROLACTONE, ALPHA, BENZOYL, GAMMA, METHYL, GAMMA, BUTYROLACTONE (I), AND
ALPHA, BENZOYL, BETA, GAMMA, DIMETHYL, GAMMA, BUTYROLACTONE. THE STRUCTURES
OF THESE COMPS. WERE DETD. BY IR AND PMR SPECTROSCOPY. THE
DECARBOXYLATION OF I GAVE KNOWN MECH(OH)CH SUB2 CH SUB2 COPH. THESE
LACTONES CONTAIN CIS-H ATOMS IN BETA AND GAMMA POSITIONS.
FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 517.948:517.88:519.4

RASKIN, V. G., YASAKOV, A. I.

"On the Problem of Exponential Stability of Solutions of Differential Equations in Banach Space"

Tr. NII mat. Voronezh. un-ta (Works of the Scientific Research Institute of Mathematics, Voronezh University), 1970, vyp. 1, pp 120-127 (from RZh-Matematika, No 5, May 71, Abstract No 5B942)

Translation: Let E be a Banach space, and let L_M^k be the Banach space of Bochner-measurable functions on $[0, +\infty]$ with values in E in the norm

$$\|x\|_{L_M^k} = \inf \left\{ k: \int_0^{+\infty} M \left[\frac{\|x(t)\|_E}{k} \right] dt < 1 \right\},$$

where $M(u) = \int_0^{|u|} \rho(s) ds$ for some function $\rho(s)$ which is positive when $s > 0$,

nondecreasing, and such that $\rho(0) = 0, \lim_{s \rightarrow +\infty} \rho(s) = \infty$. In this case, sufficient con-

ditions are found for exponential stability of the zero solution of the problem $y' = A(t)y, y(t_0) = y_0$, (i. e., satisfaction of the inequality

1/2

RASKIN, V. G., YASAKOV, A. I., Tr. NII mat. Voronezh. un-ta, 1970, vyp. 1, pp 120-127

$$\|y(t)\| < B_1 e^{-\alpha(t-t_0)} \|y(t_0)\|$$

for some α and B_1 and for all $t_0 \geq 0$, assuming that for any $f(t) \in L_M^*$ the problem $x' = A(t)x + f(t), x(t_0) = x_0$ has a bounded solution. T. Yenzikeyeva.

2/2

YAS'KOV, D.A.

S/KS 59008
U-73

2-1. DISTRIBUTION OF ADMIXTURES IN THE EPITAXIAL LAYERS OF CALSIUM PHOSPHIDE ALLOYED WITH SULFUR AND NITROGEN

(Article by D. G. Zobelina, A. N. Petrov, A. N. Pikhelina, D. A. Yarkov, V. P. Krepaya, N. G. Arsenova, Leninskii Novotbil'sk, lit. Sbornik na protiv. Kazan. Univ. Seriya Fiziko-Matem. Nauki, Kazan, 1971, No. 1, pp. 1-17)

The properties of monocrystalline layers of calcium phosphide alloyed with nitrogen were investigated. The layers were grown by the method of liquid-phase epitaxy in an open system on GaP substrates alloyed with sulfur obtained by the Crochanski method. Alloying with nitrogen was realized by adding gallium nitride from 0.05 to 1 percent by weight to the Ga-P melt. The sulfur got into the melt as a result of solution of the substrate.

By using the measurements of the capacitance of the surface barrier at the GaP-Au contact, a study was made of the concentration distribution of the donors with respect to depth of the epitaxial layer. On the film obtained, a study was made of an analysis of the absorption spectra, the nitrogen concentration in the film was determined as a function of the amount of GaI in the Ga-P melt. Results are presented from a study of the electroluminescence of the p-n junctions obtained by the diffusion of zinc in the grown layers. The radiation spectra at room temperature contained two bands with 2.18 electron volt and 2.2 electron volt peaks.

The quantum yield of green radiation is $4 \cdot 10^{-3}$. The brightness of the diodes at a current density of 10 millamps/cm² was 30 mcd at 100 millamps/cm²; it was 1,100 mcd.

1/2 064 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PREPARATION OF OHMIC CONTACTS IN SEMICONDUCTORS -U-
AUTHOR--(03)-POPOV, V.A., PIKHTIN, A.N., YASKOV, D.A.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, (2), 238-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--SEMICONDUCTOR DEVICE, SEMICONDUCTOR MATERIAL, LASER
APPLICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1801 STEP NO--UR/0120/70/000/002/0238/0239
CIRC ACCESSION NO--AP0135366
UNCLASSIFIED

2/2 064

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LASER WAS USED TO PREP. OHMIC CONTACTS IN SEMICONDUCTORS. RESULTS ARE GIVEN FOR ALLOYING OF DIFFERENT METALS AND MIXTS. INTO A SERIES OF SEMICONDUCTOR MATERIALS. FACILITY: LENINGRAD, ELEKTROTEKH. INST., LENINGRAD, USSR.

UNCLASSIFIED

172 / 032 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--KINETICS OF INTERIMPURITY RADIATIVE RECOMBINATION IN GALLIUM
PHOSPHIDE -U-
AUTHOR--(03)-PIKHTIN, A.N., YASKOV, D.A., GLINSKIY, G.F.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERO. TELA 1970, 12(2), 386-93
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RADIATIVE RECOMBINATION, PHOSPHIDE, GALLIUM COMPOUND,
ELECTROLUMINESCENCE, LUMINECENCE SPECTRUM, IMPURITY CENTER, ZINC,
TELLURIUM, PN JUNCTION, REACTION KINETICS, LUMINESCENCE QUENCHING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1095 STEP NO--UR/0181/70/012/002/0386/0393
CIRC ACCESSION NO--AP0054698
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054698

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INSIDE THE SPECTRAL BAND DETD. BY RADIATIVE RECOMBINATION OF AN ELECTRON, CAPTURED BY A DONOR, WITH A HOLE, CAPTURED BY A SPATIALLY CAPTURED ACCEPTOR, DEPENDENCE SHOULD BE OBSD. OF THE RELAXATION TIME τ , τ , ON THE ENERGY OF PHOTONS, $h\omega$. THE THEORETICAL DEPENDENCE $\tau(h\omega)$ IS EXPTL. CONFIRMED FOR INTERIMPURITY (ZN AND TE) RADIATIVE RECOMBINATION IN GAP (GREEN BAND AT 80DEGREEK EXPTL. DATA WERE OBTAINED IN THE INVESTIGATION OF THE KINETICS OF ELECTROLUMINESCENCE OF GAP DIODES IN THE PULSE INJECTION OF CHARGE CARRIERS ACROSS THE P-N JUNCTION. IN THE RED BAND OF ELECTROLUMINESCENCE, THE MAGNITUDE OF τ WAS INDEPENDENT OF $h\omega$. THE SPECTRAL COMPN. OF THE RADIATION WAS INVESTIGATED IN THE PROCESS OF QUENCHING OF LUMINESCENCE AND THE EFFECT OF TEMP. ON THE KINETICS OF RADIATIVE RECOMBINATION IN GAP. FACILITY: LENINGRAD, ELEKTROTEKH. INTS. IN UL'VANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 047

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--DOPING OF GALLIUM PHOSPHIDE CRYSTALS DURING VERTICAL CRUCIBLELESS ZONE MELTING -U-

AUTHOR--(03)-ILIN, YU.L., SOROKIN, V.S., YASKOV, D.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 447-51

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CRYSTAL IMPURITY, SINGLE CRYSTAL, CRYSTALLIZATION, VAPORIZATION, REACTION KINETICS, ZINC, TELLURIUM, METAL COATING, ZONE MELTING, GALLIUM ARSENIDE, PHOSPHIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0363/70/006/003/0447/0451

PROXY REEL/FRA--1994/1900

CIRC ACCESSION NO--AP0115719

UNCLASSIFIED

2/2 047

UNCLASSIFIED

PROCESSING DATE--09GCT70

CIRC ACCESSION NO--AP0115719

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

ABSTRACT. A TECHNIQUE WAS WORKED OUT FOR DOPING GAAS FROM THE GAS PHASE, MAKING IT POSSIBLE TO GROW SINGLE CRYSTALS WITH A UNIFORM BULK DISTRIBUTION OF THE DOPING IMPURITIES. THE POSSIBILITY IS SHOWN OF CONTROLLING THE CRYSTALS BY IMPURITY COMPN. WITHIN RATHER LARGE LIMITS BY CHANGING THE PARTIAL VAPOR PRESSURE OF THE DOPING ELEMENT IN THE WORKING VOL. THE DISTRIBUTION COEFFS. FOR ZN AND TE WERE FOUND EXPTL., AS WELL AS THE KINETIC VAPORIZATION COEFF. OF ZN CORRESPONDING TO THE STOICHIOMETRIC GAP MELT. FACILITY: Leningrad, Elektrotekh. Inst. in. Ul'Yanova. Lenina, Leningrad, USSR.

UNCLASSIFIED

1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--STUDY OF THE WORKING SPACE AND OF THE WORKING CONDITIONS OF A 16.5
MVA FURNANCE MAKING SILICOMANGANESE -U-

AUTHOR--(04)-ZHERDEV, I.T., CHKHEYDZE, Z.A., SIORIDZE, G.YA., YASKOV, YE.S.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 137

DATE PUBLISHED-----70

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

TOPIC TAGS--FERRUALLOY, ELECTRIC FURNACE, CURRENT DENSITY, ELECTRODE
PROPERTY, TEMPERATURE DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1994/1869

STEP NO--UR/0133/70/030/002/0137/0137

CIRC ACCESSION NO--AP0115688

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHARGE COMPN., TEMP., C.D., AND POWER DISTRIBUTION IN THE CHARGE OF A 7-M DIAM., 3-M DEEP, 3 ELECTRODE FURNACE WERE DETD. RADIAL CURRENT DISTRIBUTION FROM ELECTRODES WAS VERY NONUNIFORM, AND C.D. INCREASED DOWNWARDS, NONE BEING OBSD. IN THE UPPER LAYERS OF THE CHARGE AND UNDER FEEDER SPOUTS TO THE DEPTH OF 2-2.3 M. A SMALL ARC WAS PRESENT IN THE CIRCUIT OF EACH PHASE. POWER DISTRIBUTION PER PHASE WAS SUBSTANTIALLY UNIFORM.

UNCLASSIFIED

YAS'KOVA, V. S.

JPRS 55300
IDC: 61473
/ 7/1/72

HYGIENIC SIGNIFICANCE OF HOT PARTICLES

Article by H.A. NEVSKAYA, S.I. Tarasov, V.S. Yas'kova, Leningrad Scientific Research Institute of Radiation Hygiene, USSR Ministry of Health, Moscow, Vestnik Akademi Meditsinskikh Nauk SSSR, Moscow, No. 1, 1972, pp 14-17]

The discovery of particles with radioactivity of the order of 10⁻³ curies or more in air, and the related assumption that they present a special biological danger if they penetrate into the human organism served as the basis for a series of special investigations. To date more than 100 works have been published in the world literature dealing with highly radioactive particles, which have been named hot particles.

Analysis of the literature indicates that in spite of the complexity of investigating hot particles and the diversity of questions that arise some rather valuable scientific information has been accumulated to date.

It was established that hot particles may appear in the atmosphere as a result of nuclear explosions or in industry. In the course of producing and processing radioisotopes on powerful gamma units and nuclear reactors.

With regard to explaining the mechanism of formation of hot particles following a nuclear explosion, the most importance is attributed to condensation and coagulation of vapor-like explosion products (V.N. Lavrenchuk). It is generally considered that the mechanism of formation of highly radioactive particles under industrial conditions is based on the process of dispersion of material with high specific radioactivity, neutron activation of aerosol particles, and settling of radioactive atoms on inactive dust particles (O.M. Zarayev).

A number of investigations revealed there is a link between concentration of hot particles in the atmosphere and the time of nuclear explosions. It has been indicated that the shape of the particles is arbitrary. Their size ranges from tenths of a micron to several microns. They dissolve poorly in water and biological substrates.

USSR

UDC 612.215.014.2-014.481/.482

KITAYEV, E. M., ORESHINA, A. F., TARASOV, S. I., and VASIKOVA, V. Z., Laboratory of Radiation Genetics and Remote Radiation Pathology, Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Laboratory of Hygiene of the Air, Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Morphological Changes in the Lungs Produced by Single Hot Particles Experimental Study"

Moscow, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

Abstract: About 100 hot particles (particles of Co^{60} 10-20 microns in size with an activity of 10^{-8} to 10^{-9} C) in 0.2 ml of physiological saline were injected into the jugular vein of rats. Morphological changes in the lungs were studied 5-30 days thereafter. No significant changes were observed in the energy absorption zone. The zone of absorption of doses of 10^2 and 10^6 rads occupied a space with a radius of 200 microns, while destructive changes appeared only within a radius of 15-20 microns. Although there was an absence of focal necrosis, changes were noted in the blood vessels containing particles - homogenization and loss of structure of the walls, swelling of collagenous and argyrophil fibers. The intensity of the destructive processes was unrelated to the size of the radiation

1/2

USSR

KITAYEV, E. M., et al, Meditsinskaya Radiologiya, No 4, 1970, pp 52-56

dose. After 20-30 days, besides the vascular changes, desquamation and necrobiosis of endothelial cells, there were signs of proliferation of cellular elements in the adventitia. The radioactive particles had no effect on the adjacent structures. Thus, the changes observed appear to be comparatively insignificant from the standpoint of injury to lung tissue and impairment of respiratory function.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS IN THE ACTION OF SINGLE
FIXED HOT PARTICLES (EXPERIMENTAL RESEARCH) -U-
AUTHOR-(04)-KITAYEV, E.M., ORESHINA, A.F., TARASOV, S.I., YASKOVA, V.Z.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 4, PP 52-56
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MORPHOLOGY, LUNG, RAT, COBALT ISOTOPE, RADIATION BIOLOGIC
TISSUE EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0955 STEP NO--UR/0241/70/015/004/0052/0056
CIRC ACCESSION NO--AP0109112
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER SETS FORTH THE RESULTS OF EXPERIMENTAL STUDY OF MORPHOLOGICAL CHANGES IN THE LUNGS OF RATS UNDER THE EFFECT OF SINGLE FIXED HOT PARTICLES. PARTICLES OF CO PRIME60 OF MICROSCOPIC SIZE WITH AN ACTIVITY OF 10 PRIME NEGATIVE9 CURIE WERE USED. THE AUTHORS DEMONSTRATE THE ABSENCE OF FOCAL NECROSIS AT THE SITES OF FIXATION OF SINGLE HOT PARTICLE IN IRRADIATION DOSES OF THE SURROUNDING TISSUES OF 10 PRIME NEGATIVE4-10 PRIME NEGATIVE5 RAD DURING A PERIOD FROM 5 TO 30 DAYS. THERE WERE FOUND SOME MORPHOLOGICAL CHANGES IN VESSELS AT THE SITE OF FIXATION OF PARTICLES AND IN INTERALVEOLAR MEMBRANES WITHOUT A DEFINITE RELATION WITH THE VALUE OF THE RADIATION EFFECT.

UNCLASSIFIED

Organophosphorous Compounds

USSR

UDC 541.128 + 547.451

MEL' NICHENKO, I. V., KOZLOVA, N. YA, and YASNIKOV, A. A.

"Hydrolysis of Phosphate Ester of Glyceraldehyde in the Presence of Aromatic Amines"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 38, No 11, 1972, pp 1152-1155

Abstract: In contrast to results of earlier studies of the hydrolysis of the phosphate ester of glyceraldehyde (FGA) in the presence of salt buffers, aliphatic amines and diamines, FGA hydrolysis with various aromatic amines yielded a new type of catalysis. Hydrolysis of FGA was conducted in an aqueous solution at 40° in a pH interval 4-10. FGA hydrolysis kinetics were measured with the following amines: o-, m-, p-phenylenediamine, aniline, o- and p-aminophenol, p-nitroaniline, alpha-aminopyridine, N,N diethyl-p-phenylenediamine, quinone, hydroquinone, and p-nitrophenol. Reaction rate was measured by phosphate concentration level. The formation of methylglyoxal in the reaction mixture was proven by adding 2,4-dinitrophenylhydrazine to the reaction mixture. The resultant methylglyoxal hydrazone was identified by chromatography. The aromatic amines are classified into 3 groups of catalysts on the basis of rate dependance on pH. The first group (p-phenylenediamine,

1/ 3