

UNCLASSIFIED

PROCESSING DATE—30OCT70

FORMATION OF A POLYCONJUGATED POLYMER DURING THE THERMAL
DECOMPOSITION OF POLYACENAPHTHYLENE —U—
AUTHOR—(05)—MARKEVICH, I.N., BEYLIN, S.I., TETERINA, M.P., KARPACHEVA,
G.P., POLGOPLOSK, B.A.
COUNTRY OF INFO—USSR

SOURCE—DOKL. AKAD. NAUK SSSR 1970, 191(2), 362-5
DATE PUBLISHED—70

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SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—CONJUGATED POLYMER, THERMAL DECOMPOSITION, NAPHTHALENE,
NAPHTHENE, POLYMER STRUCTURE, CHEMICAL KINETICS, PYROLYSIS

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
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STEP NO—UR/0020/70/191/002/0362/0365

CIRC ACCESSION NO—AT0124749

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ACCESSION NO--AT0124749 UNCLASSIFIED
 ABSTRACT/EXTRACT--(U) GP-0-
 POLYACENAPHTHYLENE (II) IN PHCL AND IN BULK STARTS AT 180DEGREES AND
 335-45DEGREES, RESP. THE PRODUCTS CONTAIN ACENAPHTHENE, ACENAPHTYLENE
 (III) A CONJUGATED POLYMER, BUT NO H. ON THE BASIS OF IR AND EPR
 SPECTROSCOPY THE POLYMER WAS ASSIGNED STRUCTURE III IN EQUALS 5-7). THE
 FORMATION OF III INVOLVES THE SPLITTING OFF OF II FROM I AND THE REDN.
 OF II WITH I. THE KINETICS OF I MOL. WT. DECREASE DURING THE PYROLYSIS
 IS DISCUSSED. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA,
 MOSCOW, USSR.

PROCESSING DATE--30OCT70

UNCLASSIFIED

Acc. Nr. **AP0024694**

Abstracting Service:
CHEMICAL ABSTRACTS

Ref. Code
UR0460

32267v Principles of the copolymerization of dienes with 2,4-dimethylstyrene under the influence of organolithium compounds in hydrocarbon media. Beilin, S. I.; Vollerstein, E. L.; Teterina, M. P.; Shvarts, M. N.; Dolgoplosk, B. A. (Inst. Neftekhim. Sin. im. Topchieva, Moscow, USSR). Vysokomol. Soedin., Ser. B 1969, 11(10), 733-6 (Russ). In the copolymn. of dienes with styrene in hydrocarbon media, initiated with organolithium compds., there is at first a predominant polymn. of diene and only when the diene is exhausted, a block of polystyrene begins to form. The behavior of dienes with 2,4-dimethylstyrene (I) in attempted copolymn. was examd. The kinetics of copolymn. was studied dilatometrically. Products were analyzed by ir spectroscopy. The reactivity ratios were: for butadiene (M_1) in hexane, $r_1 = 16.65$, $r_2 = 0.06$; for isoprene (M_1) in hexane, $r_1 = 0.09$. The microstructure of the butadiene part of the chain differed little from the structure of the homopolymer. No effect of penultimate structure was apparent. The possibility of copolymn. of butadiene with acenaphthylene (II) was examd. Addn. of a small amt. of II (1 mole per mole of BuLi) resulted in complete inhibition of the polymn., due to the metallation of II with Li.

M. Ladacki

REEL/FRAME
19651462

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TETERINA, N. I.

"Multiplicative Stochastic Integrals with Operator Coefficients"

Ukr. Mat. Zh. [Ukrainian Mathematics Journal], 1973, Vol 25, No 3,
pp 419-423 (Translated from Referativnyy Zhurnal Kibernetika, No 10,
1973, Abstract No 10V102)

Translation: The existence of a multiplicative stochastic integral with operator coefficients is proven. A linear stochastic equation is produced for it. A number of properties of a multiplicative stochastic integral with fixed and variable upper limit are formulated. The application of the multiplicative stochastic integral for representation of the solution of the Cauchy problem for an operator parabolic second order equation in the form of a continual integral is studied.

Author's view

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USSR

UDC: 519.217

SERGEYEVA, L. V., TETERINA, N. I.

"A Study of the Solution of a Stochastic Equation With Random Coefficients"

Teoriya veroyatnostey i mat. statist. Mezhved. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1970, vyp. 3, pp 141-154 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV126)

[No abstract]

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Acc. Nr: **AP0049047**

Ref. Code: **UQ0357**

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr 1
PP 60-64

**HEREDITARY DYSTROPHY OF THE MACULA LUTEA TRACED
IN FIVE GENERATIONS**

T. P. Teterina

Macular dystrophy, preceded by achromasia and nictalopia, was traced in 5 generations of one pedigree, this morbid conditions having declared itself in 16 out of 68 of its members. In the family under examination the transmission of this sign occurred after the autosome-dominant type, the mono- and dizygotic twins being concordant for the given disease. In this same family the presence of familial strabismus was recorded along with the hereditary dystrophy of the macula lutea. In one of this pedigree's members strabismus appeared in conjunction with achromasia and nictalopia. Clinical manifestations of this disease ran an identical course in different members of the pedigree but changes in the macular region were ostensible in senile patients only. Physiological and ophthalmological investigations indicate the lesion of the cones layer in the retina. In a far advanced stage rods are also implicated and the process then ends with cecity. A thorough examination of the organ of vision should be effected in close and remote relatives of patients with achromasia and nictalopia to arrive at correct recognition of hereditary macular dystrophy and its early detection, this being of prime importance for medico-genetic consultation.

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19800833

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UNCLASSIFIED

PROCESSING DATE--0906170
SUBJECTED TO

STABILITY OF CYLINDRICAL SHELLS OF FIBERGLASS PLASTIC
CREEP UNDER A PROLONGED EXPOSURE TO EXTERNAL PRESSURE -U-
AUTHOR--(02)--RIKARDS, R.B., TETERS, G.A.

COUNTRY OF INFO--USSR

SOURCE--MEKHANIKA POLIMEROV, VOL. 6, JAN.-FEB. 1970, P. 81-85

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, PHYSICS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CYLINDRIC SHELL STRUCTURE, FIBERGLASS, CREEP, HYDROSTATIC
PRESSURE, NONLINEAR EQUATION, SHEAR STRESS, DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1893

CIRC ACCESSION NO--AP0112873

STEP NO--UR/0374/70/006/000/0031/0085

UNCLASSIFIED

ACCESSION NO--AP0112873 UNCLASSIFIED
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE BEHAVIOR OF A
 CYLINDRICAL SHELL UNDER EFFECT OF A PROLONGED HYDROSTATIC PRESSURE,
 USING THE GEOMETRICALLY NONLINEAR EQUATIONS OF THE THEORY OF SHELLS OF A
 TIMOSHENKO TYPE. IN THESE SHELLS IT IS POSSIBLE TO MAKE ALLOWANCE FOR
 STRAINS DUE TO A TRANSVERSE SHEAR. A SYSTEM OF NONLINEAR DIFFERENTIAL
 EQUATIONS IS OBTAINED FOR DESCRIBING THE CHANGES IN THE SYSTEM WHEN
 SUBJECTED TO THE LOAD. SOLUTION IS OBTAINED BY MEANS OF A DIGITAL
 COMPUTER. THE CRITICAL TIMES FOR DIFFERENT LOADING LEVELS ARE OBTAINED.
 FACILITY: AKADEMIJA NAUK LATVIISKOI SSR, INSTITUT MEKHANIKI
 POLIMEROV, RIGA, LATVIAN SSR.

PROCESSING DATE--09OCT70

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE APPLICABILITY OF THE TWO DIMENSIONAL, KIRCHHOFF LOVE APPLIED THEORIES OF THE TIMOSHENKO AND AMBARTSUMIAN TYPE, TO THE STABILITY PROBLEMS OF SHELLS WITH A LOW SHEAR RIGIDITY. CRITICAL STRESSES CALCULATED BY USING THESE THEORIES ARE COMPARED WITH RESULTS OBTAINED BY BABICH (1968) FOR STABILITY OF CYLINDRICAL SHELLS ON THE BASIS OF GENERALIZED SOLUTIONS OF THE THREE DIMENSIONAL, LINEARIZED SOLUTIONS OF THE ELASTICITY THEORY.

UNCLASSIFIED

USSR

UDC 621.785.5:537.525

TETERSKIY, V. A., STEFYUK, T. YU., ROTER, YE. A., Physical-Mechanical Institute of the Ukrainian SSR Academy of Sciences, L'vov

"Device for Determining the Physical-Mechanical Characteristics of Metals Saturated with Gases in Glow Discharge"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 90-91

Abstract: A device is introduced which was designed and manufactured to perform studies of the mechanical properties of metal in the case of saturation of them with gases in a broad temperature-time interval. The basic assemblies include the operating chamber, a vacuum system, a loading device, instruments for automatic recording of the stress-strain diagram, an electric temperature measurement and regulation system, and an electric system for measuring and regulating the basic parameters of electric discharge. The device permits ionization of the gas medium both by radioactive isotopes of α and β radiation and by electric discharge. Electric currents from 10^{-8} to 10^{-1} amps can be obtained, and the magnitude of the currents predetermines the degree of ionization and, consequently, the concentration of active gas particles on the surface of the specimen. The electrical resistance can be measured during the strain process and by the electrical conductivity as a function of the degree of strain [I. A. Odling, et al., Izv. AN SSSR, Metallurgiya gornoye delo, Nos 1 and 1/2

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TETERSKIY, V. A., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 90-91

2, 1964], it is possible to judge the rupture kinetics and the nature of the interaction of the crystal lattice defects with interstitial admixtures. The device has demonstrated high reproducibility of the results in the case of saturation and deformation of specimens in ionized gases.

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USSR

UDC 621.791.856.2.03

GUREVICH, S. M., NERODENKO, M. M., POVOD, A. G., TETERVAK, A. F.,
ASNIS, YE. A., Institute of Electric Welding imeni Ye. O. Paton,
Academy of Sciences UkrSSR, GRISHIN, V. K., FERTIKOV, V. G.,
ESTRIN, V. N., LEVKOVICH, R. M., Moscow

"Equipment for Welding Chemically-Active Refractory Metals in a
Controlled High Purity Helium Atmosphere"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 70, pp 45-47

Abstract: A description is given of equipment for manual and automatic electric welding of refractory metals in a controlled atmosphere of high-purity helium. The equipment, which was developed at the Institute of Electric Welding imeni Ye. O. Paton, ensures continuous control of oxygen, nitrogen, and water vapor impurities and helium regeneration. It consists of a welding chamber with a vacuum system; 2) equipment for helium purification and 3) a helium purity control system. A photograph and schematic diagram of the installation are presented. The welding chamber (700 mm in diameter, volume, approximately 1000 l) is made of
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GUREVICH, S. M., et al., *Avtomaticheskaya Svarka*, No 8, Aug 70, pp 45-47

1Kh18N9T steel. It is provided with a VN-1 suction pump, making it possible to obtain a 2×10^{-5} torr vacuum in the chamber with full load. A sorption method using activated carbon and zeolite at liquid nitrogen temperature at an absorber pressure of 150 atm is used for helium purification. A KhG-type gas chromatograph is used for helium purity control.

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1/3 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THERMODYNAMICS OF THE PREPARATION OF POTASSIUM THERMOPHOSPHATE,
CAKPD SUB4 -U-
AUTHOR--(02)-CHELNOKOV, A.A., TETEREVKOV, A.I. ~~SECRET~~
COUNTRY OF INFO--USSR
SOURCE--AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 54-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMODYNAMICS, POTASSIUM COMPOUND, PHOSPHATE, SILICATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0950 STEP NO--UR/0419/70/000/001/0054/0057
CIRC ACCESSION NO--AP0118116
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THERMODYNAMIC STUDY OF C SUBAKPO SUB4 (I) PRODUCTION BASED ON AVAILABLE DATA CLAIRFIED THE STEPS IN THE PROCESS OF FUSION OF CERTAIN P CONTG. ORES WITH SEVERAL DIFFERENT K COMPS. THE GIBBS ENERGY DELTA G SUBT, CALCD. BY USING THE GIBBS-HELMHOLTZ EQUATION, EXPLAINS THE PROBABILITY OF THE MANY POSSIBLE REACTIONS LEADING TO I. WHEN USING CA SUB3(PO SUB4) SUB2 (II) AS STARTING MATERIAL, DELTA G SUBT IS LESS THAN 0 WITH THE FOLLOWING REAGENTS IN DECLINING ORDER OF REACTIVITY: K SUB2 O, K SUB2S, K SUB2 CO SUB3, K SUB2 SIO SUB3, AND K SUB2 SO SUB3. BEST RESULTS WERE ACHIEVED WITH K SUB2 CO SUB3 AT 1000DEGREES WHEREBY K SUB3 PO SUB4 IS FORMED PRIMARILY AND IS CONVERTED BY AN EXCESS OF II AT A HIGH REACTION RATE TO I. CA SUB10 F SUB2 (PO SUB4) SUB6 REACTS WITH K COMPS. PRIMARILY WITH FORMATION OF II AND KF AND THEN I IS FORMED. WITH K SUB2 S AND K SUB2 SIO SUB3, DELTA G SUBT GREATER THAN 0, A REACTION IS IMPROBABLE. THERMODYNAMICS SHOW THAT ONLY THE REACTION BETWEEN II AND K SUB2 O IS POSSIBLE. AT 1373DEGREES, II REACTS WITH K SUB2 CO SUB3 BECAUSE THE ESCAPE OF CO SUB2 SHIFTS THE EQUIL. OF THE REACTION AND MIXING OF SIO SUB2 ENHANCES THE PROCESS BY BINDING CAO. H SUB2 O VAPOR IMPEDES THE REACTION. THE FORMATION OF CA SUB4 P SUB2 O SUB9 IS POSSIBLE THERMODYNAMICALLY BUT IT DECOMPS. RAPIDLY WITH K SUB2 CO SUB3. IN THE SYSTEM CAO-P SUB2 O SUB5-SIO SUB2, SEVERAL VARIATIONS OF SOLID SOLNS. ARE COEXISTENT. AS THE FINAL RESULT OF FUSION, I AND ITS SOLID SOLNS. WITH ALPHA II OR WITH K SUB2 SIO SUB3 OR THE SOLID SOLNS. OF ALPHA II IN CA SILICATES ARE FORMED ALL OF WHICH ARE SOL. IN CITRIC ACID.

UNCLASSIFIED

3/3 015
CIRC ACCESSION NO--AP0118116
ABSTRACT/EXTRACT--FACILITY:

UNCLASSIFIED

PROCESSING DATE--16OCT70

BELORUSS. TEKHNOL. INST. IM. KIROVA, USSR.

UNCLASSIFIED

USSR

UDC: 661.143:546.47'221

GUGEL', B. M., MIKHALEV, A. A., ~~TETERYUKOVA, V. G.~~

"Ways to Improve Phosphors for Black and White Television"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 67-72 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L174)

Translation: The "white" mixture of luminescent compositions for black and white television screens consists of ZnS:Ag and ZnS-CdS:Ag compositions. If the grain size in the ZnS-CdS:Ag composition is larger than in ZnS:Ag, then there is a tendency toward formation of a two-layer screen during deposition. In this case, cascade excitation of luminescence is observed, which leads to nonuniform color of the fluorescence on the screen. In order to eliminate this effect, it is necessary to use a coarser grained ZnS:Ag composition, or to maintain a greater difference between the temperature of the sedimentation medium and the work area during deposition. *Resumé.*

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1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--DETERMINATION OF MASS TRANSFER COEFFICIENTS DURING FRACTIONAL
DISTILLATION -U-
AUTHOR--(03)-RUDDOV, G.YA., CHEKHOV, G.S., ~~LEVIN, YU.V.~~
COUNTRY OF INFO--USSR
SOURCE--KHM. TEKHNOLOG. TOPL. MASEL 1970, 15(3) 34-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MASS TRANSFER, DISTILLATION, GAS STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1488 STEP NO--UR/0065/70/015/003/0034/0037
CIRC ACCESSION NO--AP0112482
UNCLASSIFIED

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PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESISTANCE TO MASS TRANSFER FOR 3 MIXTS. TO BE DISTO. WAS MAINLY IN THE VAPOR PHASE. THE ANAL. OF THE PHASE RESISTANCE IN PLATE DISTN. COLUMNS WAS BASED ON A COMPARISON OF THE MASS TRANSFER COEFFS. FOR 2 SYSTEMS, PROVIDED THAT THE CONTENT OF 1 COMPONENT IN THE BINARY MIST. WAS LESS THAN OR EQUAL TO 1PERCENT. THE METHOD SHOWED THE EFFECT OF THE DISPERSION COEFF. AND COULD BE USED IN THE CASE OF LINEAR EQUIL. DEPENDENCE. COEFFS. AND RESISTANCE FOR SOME SYSTEMS ARE GRAPHICALLY PRESENTED.

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UDC 621.128.4(088.8) (47)

FERENETZ, V. A., SMIRNOV, V. T., ~~SMIRNOV, V. T.~~ TETROV, A. K., and NIGMATULLIN, N. F.

"Device for Automatic Level Adjustment of Collodion Die of Casting Machine"

USSR Author's Certificate No 236048, Filed 9/07/66, Published 30/06/69
(from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'-
naya Tekhnika, No 2, 1970, Abstract No 2A507P by M. A.)

Translation: This invention relates to the area of automatic regulation of the level of liquid and viscous media. In contrast to known devices for automatic regulation of level using hydrostatic transducers, the device suggested has increased reliability and stability of operation due to the introduction of rigid negative feedback. A diagram and description of the device are presented. One illustration.

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USSR

UDC 517:519.4/.5

TETRUASHVILI, M. R.

"On a Space of Invariant Measures of a Maximum Character"

Tr. In-t prikl. matem. Tbilissk. un-ta (Works of the Institute of Applied Mathematics, Tbilisi University), 1969, No 2, pp 21-26 (from RZh-Matematika, No 7, July 1970, Abstract No 73745)

Translation: Let (X, S, μ) be a space with a measure, and let $S(\mu)$ be a set of elements S of finite measure μ . The character of space (X, S, μ) is the lowest power m for which there exists a subset of power m which is dense in metric space $S(\mu)$. It is known that in a compact, metrizable, connected group or locally compact Abelian group G there exists a continuation of the Haar measure in G with character $2^{|G|}$; here $|G|$ is the power of group G . In this article a space of continuations of Haar measure in G of maximum character $2^{|G|}$ is constructed which has a maximum power $2^{|G|}$ for an arbitrary, locally compact σ -compact group G . A. Styopin.

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Acc. Nr.: **AP0029106**

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,
Vol 70, Nr 1, pp 115-122

**CORRELATIONS OF THE CLINICAL PICTURE AND MORPHOLOGICAL BRAIN
CHANGES IN THE PROPULSIVE FORM OF EPILEPSY**

I. S. Tets, G. F. Perevoshchikova, N. A. Smirnova

On the basis of personal experience and literary data the authors discuss problems of the morphological basis in propulsive forms of epilepsy. Clinico-anatomical data are reported of a case in a 9-year-old patient. The lethal outcome was due to bronchopneumonia. The conveyed data demonstrated that propulsive epilepsy is one of the forms of dysontogenesis. Mental immaturity so typical for this form of epilepsy is probably related to an organic brain insufficiency on the cerebellar-stem-subcortical nodes — cortical level (motor and temporal, and particularly in the speech zones). The depicted pathology in the area of the cerebellar system, as well as in the speech zones of the brain allow to understand the anatomofunctional basis of acute cerebellar ataxia seen so often in propulsive epilepsy. The mechanism of propulsive attacks are also determined by changes in the subcortical-stem and cerebellar system.

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UDC 669.295.018.9(088.8)

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TURKINA, A. N., ODOYEVSKIY, L. S., KHAZANOVA, T. P., KARSANOV, G. V.,
ANOSHKIN, N. F., TSISTYAKOV, Ye. P., PAVLOV, A. G., TRUBIN, A. N., and
TETYUKHIN, V. V.

"Master Alloy for Production of High-Strength Titanium Alloys"

USSR Author's Certificate No 309061, filed 15/07/69, published 20/09/71
(Translated from Referativnyy Zhurnal Metallurgiya, No 3, 1972, Abstract
No 3G159P by G. Svodtseva)

Translation: A master alloy for the production of high-strength Ti alloys,
containing Mo, V, and Al. To increase the quality of the ingots produced,
the alloy includes Cr and Fe with the following relationships of components
(in %): Mo 32-34, V 32-34, Al 18-22, Cr 6-8, Fe 5-7. The master alloy can
be produced either by direct smelting of the metals in an open induction
furnace or by an aluminothermal method in a furnace.

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Single Crystals

USSR

UDC 539.8

SAVITSKIY, YE. M., Corresponding Member Academy of Sciences USSR, BURKHANOV, G. S., TETUYEVA, T. V., and KUZ'MISHCHEV, V. A., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR, Moscow

"Effects of Thermocycling on Tungsten and Molybdenum Alloy Single Crystals"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 2, 1971, pp 373-376

Abstract: A review of data on the thermocycling of single crystals of W and Mo alloys indicates that alloying elements forming with the metal matrix (W or Mo) extensive ranges of solid solutions and increasing the solubility of non-metallic inclusions (particularly C) in the solid phase increase the stability of the structure and characteristics of the alloys in thermocycling. These alloying elements comprise, in addition to Re, the data pertaining to which are reported in detail, the hexagonal metals of the VIII group Ru and Os and possibly also Mn and Tc. On the other hand, alloying elements which decrease the solubility of non-metallic inclusions and increase their amount in an undissolved state in the metal matrix expedite destruction of the single-crystal alloys in thermocycling. These alloying elements include metals of the I - VI groups. The extent to which these regularities apply to polycrystalline W and Mo should be investigated experimentally.

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USSR

UDC 669.172:669.28

SAVITSKIY, Ye. M., BURKHANOV, G. S., TETYUYEVA, T. V., and KUZ'MISHCHEV, V. A.
"Influence of Thermal Cycling Treatment on Fine Structure and Properties of
Molybdenum Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 119-124

Translation: The nature of the change in microstructure and properties of
molybdenum single crystals as a function of the time of thermal cycling in an
atmosphere of helium in the 400-1,600°C temperature interval is studied. It
is demonstrated that structural changes are related to the occurrence of
two parallel processes: 1) annihilation of dislocations and coalescence of
subgrains; 2) multiplication and motion of deformation dislocations, order-
ing of these dislocations into new subgrains. It is established that during
the first stages of thermal cycling, the first process predominates, while
later the second predominates. 6 Figures; 5 Bibliographic References.

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Acc. Nr:

AP0101481

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0079

121661m Activation of mercury by nucleophilic reagents. Direct synthesis of organomercury compounds from mercury and alkyl(aryl)halides. Vol'pin, M. E.; Teydoradze, E. A.; Flutin, K. P. (USSR). *Zh. Obshch. Khim.* 1960, 32(2), 315-18 (Russ). Anions such as I⁻, CNS⁻, S₂O₃²⁻, and Br⁻ activate Hg in reaction with alkyl or aryl halides and a synthesis of organomercury compds. was developed on this basis. Shaking 3.68 g Bul and 20.1 g Hg in dry EtOH 8 hr gave 4% BuHgI, m. 115-17°. PhCH₂Cl, Hg, and NaI in EtOH 8 hr gave (PhCH₂)₂Hg, 55% PhCH₂HgCl, m. 102-4°, and PhCH₂HgI, sepd. by extrn. with CHCl₃. *p*-O₂NC₆H₄CH₂Br and Hg with NaI in EtOH 60 hr gave *p*-O₂NC₆H₄CH₂HgBr and the corresponding iodide. Shaking 2.04 g PhI, 20.1 g Hg, 3.72 g NaI, and 60 ml dry EtOH gave 6% PhHgI. The following yields of organomercury compds. were formed in the reaction of Bul with Hg in EtOH with the indicated activators: NaCl 0, NaBr 1.5, NaI 4, KCNS 6, Na₂S₂O₃ 10; and Na₂S 2.5%; in diglyme with NaI the yield was 11% and in (MeOCH₂)₂ it was 8.6%.
G. M. Kosolapoff

REEL/FRAME
19851387

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USSR

UDC 681.325.54

CHAVCHANIDZE, V. V., KAKICHASHVILI, Sh. D., DZHAGAROV, Yu. A., CHIKVAIDZE, D. V., LESELIDZE, D. V., CHRAKADZE, M. I., ~~TEVDORASHVILI, K. G.~~, and LOBZHANIDZE, V. V.

"Optical Signal Adder"

USSR Author's Certificate No 269606, filed 27 Jan 69, published 28 Jul 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B185 P)

Translation: An optical signal adder for signals given in the form of pictures of rectangular shape is introduced. The adder contains an optical interferometer. It is distinguished by the fact that in order to improve the light efficiency and insure addition with respect to any modulus, the expanding system for conversion of the light pictures to a quadratic matrix is located at its input, after which along the channels corresponding to the components there are a Dove prism and a system of rhombic prisms with sequentially decreasing height the number of which per unit is less than the summation modulus. At the output of the indicated channels there is an interference mixer followed by the compressing system.

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USSR

UDC 632.95

TEVELEV, G. Kh., GRINSHTEYN, Ye. I., KOFMAN, L. P.

"A Method of Obtaining β, β' -bis-(0,0-dialkyldithiophosphoryl)-diethylene Disulfides"

USSR Author's Certificate No 364623, class C 07 f 9/16, C 07c 149/12, filed 23 Oct 70, published 1 Mar 73 (from RZh-Khimiya, No 18 (II), Sep 73, Abstract No 18 N448 P by O. Ye. Yachmennikova)

Translation: β, β' -bis-(0,0-dialkyldithiophosphoryl)-diethylene disulfides are obtained by the reaction of 0,0-dialkyl S- β -mercaptoethyl dithiophosphate with a halogen in a solvent. For example, 2.9 g of I₂ is added in small amounts to a mixture of 5 g of 0,0-dimethyl S- β -mercaptoethyl dithiophosphate, 20 ml of C₆H₆, and 10 ml of water at a temperature of about 20° and intensively stirred until the reaction mass becomes slightly colored. The organic layer is washed with water (2 X 10 ml) and 4 g of β, β' -bis-(0,0-dimethyldithiophosphoryl)-diethylene disulfide, n_D²⁰ 1.5985, d₄²⁰ 1.3690 is isolated. β, β' -bis-(0,0-diethyldithiophosphoryl)-diethylene disulfide, n_D²⁰ 1.5680, d₄²⁰ 1.2570 is obtained in a similar manner. Other examples are given in which Cl₂ and Br₂ are used instead of I₂ for oxidation.

1/1

USSR

UDC 547.26'118+547.279.1

TEVELEV, G. Kh., GRINSHTEYN, Ye. I., KOEMAN, L. P., SOKAL'SKIY, M. A.,
AGUREYEV, V. G., and SINITSYNA, N. T.

"Addition of S- β -Mercaptoethyl 0,0'-Dialkyl Dithiophosphates to Substituted
Olefins"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 308-314

Abstract: It is shown that S- β -mercaptoethyl 0,0'-dialkyl dithiophosphates
add to esters of maleic, acrylic and methacrylic acids as well as to substi-
tuted amides of acrylic acid in the presence of catalysts -- salts of tran-
sition metals -- with formation of the corresponding substituted S- β -alkyl-
mercaptoethyl 0,0'-dialkyl dithiophosphates. Analysis shows that the
addition reaction takes place contrary to Markovnikov's rule, with the
formation of products which are unbranched in the S- β -alkyl radical.

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USSR

UDC 632.95

TEVELEV, G. KH., GRINSHTEYN, YE. I., KOFMAN, L. P.

"Method of Preparing Substituted S-Betaalkylmercaptoethyl-O,O-Dialkylidithiophosphates"

USSR Author's Certificate No 250136, filed 18 Jul 68, published 15 Jan 70 (from RZh-Khimiya, No 18, 25 Sep 70, Abstract No 15N624, by I. M. Mil'shteyn)

Translation: Compounds with the general formula $(RO)_2P(S)SCH_2CH_2S-CH(PI)/n RII$ (I) (R and RI = H, alkyl, RII = COOALK, COOH, CONH₂, CONHALK, and C(O)N(Alk)₂), exhibiting insecticidal activity, are prepared by the reaction of O,O-dialkyl-S-beta-mercaptoethylidithiophosphates with halogenides of carboxylic acids. To a mixture of 0.12 mole ClCH₂COOMe and 0.092 mole S-beta-mercaptoethyl-O,O-dimethylidithiophosphate in 30 ml C₆H₆ is added 0.1 mole Et₃N in 15 ml C₆H₆ at 2-5°, mixed for 3 hrs at about 20°, allowed to stand for 12 hrs, and after usual treatment, I is obtained (R = Me, RI = H, n = 1, RII = COOMe) (yield 77%, b. p. 135-140/0.016, n_D²⁰ 1.5309,

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USSR

TEVELEV, G. KH., et al, USSR Author's Certificate No 250136, filed 18 Jul 68, published 15 Jan 70 (from RZh-Khimiya, No 18, 25 Sep 70, Abstract No 15N624, by I. M. Mil'shteyn)

d_{4}^{20} 1.2294), I modifications are similarly obtained (R = Et, RI = H, n = 1, RI = CONHMe), yield 70%, n_{D}^{20} 1.5440, and d_{4}^{20} 1.2277.

2/2

USSR

UDC 681.333:519.2

TEVEROVSKIY, V. I., and IVLEV, A. A.

"Device for Calculating the Variance of a Random Process"

USSR Authors' Certificate No 343273, Cl. G 06g 7/52, filed 23 Nov 70, published 6 Jul 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 20, 1972, p 168)

Abstract: To provide for calculation of the variance and root-mean-square deviation of a process with nonzero mean value, the device contains an additional counter, the input of whose first digit is connected to the output of a delay device, and setting inputs are connected to the output of the cycle counter. The outputs of the digit flip-flops of the additional counter are connected through the one's complement gates to the digit inputs of the accumulator with a shift of one high-order position. The input of the delay device is connected through an OR circuit to the output of the pulse frequency divider, whose input is connected to the input line of the device.

1/1

- 18 -

USSR

UDC: 621.317.089.68

TEVEROVSKIY, V. I., GLADKOV, V. D., AKIMOVICHKIN, I. K.

"Equipment for Analyzing and Monitoring a Group of Quantum-Mechanical Time and Frequency Standards"

Dok. Nauchno-tekhn. seminar "Metrologiya v radioelektron." Tezisy, Ch. 2 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 2), Moscow, 1970, pp 27-30 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A203)

Translation: To assure high metrological reliability of a grouped time and frequency standard based on quantum-mechanical oscillators, it is proposed that a signal be shaped whose phase (frequency) is the average of the phases (frequencies) of the separate oscillators. It is pointed out that this method is particularly applicable to quantum-mechanical oscillators in view of the small frequency difference between oscillators of this kind. In designing the averaging device, provision is made for periodic automatic phase control of the oscillators to bring the phase to that of the averaged signal. Information is given on the equipment developed. E. L.

1/1

Nuclear Science and Technology

USSR

UDC: 621.039.58,68:539.6

DIPOBES, I. K., KNYAZEV, V. A., MOISEYEV, A. A., MOSKALEV, YU. I., SIVINISEV, YU. V., TEVEROVSKIY, YE. N., TERMAN, A. V., and SHANOV, V. P.

3

"Radiation Safety Standards (NRB-69)"

Moscow, Atomnaya energiya, Vol. 28, No 6, Jun 70, pp 463-467

Abstract: In August 1969 the Ministry of Health of the USSR approved the Radiation Safety Standards (NRB-69) developed by the National Commission on Radiation Protection. Recommendations of the International Commission of Radiological Protection served as the basis for the new standards. These standards set the basic permissible levels for ionizing radiation along with the permissible admission of radioactive isotopes into an organism. This includes three categories of people: Category A including service personnel, Category B including specific individuals in the population who live in areas where the permissible radiation doses may have been exceeded and where radiation conditions are checked, and Category C which includes the entire population with respect to estimating a genetically significant radiation dosage. The new standards are mandatory for the enterprises and establishments of all ministries and agencies using, applying, processing, transporting, storing, and burying radioactive substances and ionizing radiation sources. A short summary is given of the scientific basis which served as the framework for the new standards. The new standards are differentiated from the old. Tables are 1/2

USSR

DIEOBES, I. K., et al., Atomnaya energiya, Vol 28, No 6, Jun 70, pp 463-467
given showing permissible somatic and genetic doses. Permissible surface con-
tamination levels are also given.

2/2

USSR

UDC 621.039.58

LETAVET, A. A., DIBOBES, I. K. TEVEROVSKIY, YE. N., and TERMAN, A. V.

"Development of Approaches to Radiological Protection"

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 225-231

Abstract: A review is made of the approaches to radiological safety used by the International Commission on Radiological Protection (ICRP) from its inception in 1928 to the present. The review is based entirely on the recommendations and publications of I.C.R.P. and does not contain any new material. The authors state that the National Commission on Radiological Protection of the Ministry of Health USSR is constantly reviewing radiological safety standards and endeavoring to bring Soviet practice into conformity with the recommendations of I.C.R.P. and with the standards of the International Atomic Energy Agency. The revised USSR standards on radiological protection are scheduled for publication in 1970. Orig. art. has: 10 references.

1/1

1/2 016
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--DEVELOPMENT OF APPROACHES TO RADIOLOGICAL PROTECTION -U-
AUTHOR--(04)-LETAVET, A.A., DIBOBES, I.K., TEVEROVSKIY, YE.N., TERMAN, A.V.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, AKADEMIYA NAUK SSSR ATOMNAYA ENERGIYA, VOL 28, NO 3, MAR
70, PP 225-231
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIOLOGY, RADIATION PROTECTION
CONTROL MARKING--NO RESTRICTIONS
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STEP NO--UR/0089/70/028/003/0225/0231
CIRC ACCESSION NO--AP0128786
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128786

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS MADE OF THE APPROACHES TO RADIOLOGICAL SAFETY USED BY THE INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION (ICRP) FROM ITS INCEPTION IN 1928 TO THE PRESENT. THE REVIEW IS BASED ENTIRELY ON THE RECOMMENDATIONS AND PUBLICATIONS OF I.C.R.P. AND DOES NOT CONTAIN ANY NEW MATERIAL. THE AUTHORS STATE THAT THE NATIONAL COMMISSION ON RADIOLOGICAL PROTECTION OF THE MINISTRY OF HEALTH YSSR IS CONSTANTLY REVIEWING RADIOLOGICAL SAFETY STANDARDS AND ENDEAVORING TO BRING SOVIET PRACTICE INTO CONFORMITY WITH THE RECOMMENDATIONS OF I.C.R.P. AND WITH THE STANDARDS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY. THE REVISED USSR STANDARDS ON RADIOLOGICAL PROTECTION ARE SCHEDULED FOR PUBLICATION IN 1970.

UNCLASSIFIED

Heat, Combustion, Detonation

USSR

UDC 621.039.587

BOGATYREVA, S. V., LEBEDEV, Yu. Ye., MILAYEV, A. I., TEVLIN, S. A.

"Study of the Possibility of Applying Complexons in Cooling Channels in the Presence of Radiation"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, No. 126, pp 24-27 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.36)

Translation: Solutions of compositions based on complexons can be used to wash cooling channels if the radiation doses are not too high. Active deposits are partially washed off. The presence of radiation accelerates processes within the coolant that determine the development of a protective film on pearlite steels. This makes it possible to shorten the time for treating the channels as compared with the time expended under ordinary methods. 1 ill., 2 ref.

1/1

USSR

UDC 678.06:661.183.123.3.01:53

TEVLINA, A. S., AKHNAZAROVA, S. L., KHAR'KOVA, T. P., ZHUKOVA, T. B., and KORSHAK, V. V.

"Homogeneous Anionic Membranes and Their Properties"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 15-17

Abstract: A method for production of homogeneous anionic membranes is reported based on nitration of grafted copolymers [styrene + divinylbenzene + copolymer of vinylidene fluoride and hexafluoropropylene] with a mixture of nitric and sulfuric acids followed by reduction and alkylation. The results of the effect of various transformations on the electrochemical and physical-mechanical properties of the membranes are reported. These results were obtained by regression and correlational analyses. It was established that homogeneous membranes show a high chemical and thermal stability and retain their properties even in very aggressive media such as sulfuric, hydrochloric or nitric acids.

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014
 UNCLASSIFIED
 TITLE--THE STUDY OF PRIMARY PYELONEPHRITIS IN CHILDREN -U-
 PROCESSING DATE--04DEC70
 AUTHOR--(05)-MATVEYEV, M.P., IGNATOVA, M.S., KLEMBOVSKIY, A.I., KOROVINA,
 N.A., TEVOSYAN, V.K.
 COUNTRY OF INFO--USSR
 SOURCE--PEDIATRIYA 49(2): 34-40. ILLUS. 1970
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 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--GENITOURINARY SYSTEM DISEASE, KIDNEY, NEPHRITIS
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 CIRC ACCESSION NO--AT0139810
 UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AT0139810

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF PYELONEPHRITIS HAS BECOME ONE OF THE PRINCIPLE ONES IN NEPHROLOGY. CLINICAL, LABORATORY, ROENTGENOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF 50 CHILDREN WITH AN INFECTIOUS PROCESS IN THE URINARY SYSTEM WERE GIVEN. THE INVESTIGATIONS CONDUCTED MADE IT POSSIBLE TO SINGLE OUT 3 GROUPS OF CHILDREN: THE FIRST GROUP INCLUDED CHILDREN (12) WITH DISTINCT CLINICAL AND ROENTGENOLOGICAL SIGNS OF PYELONEPHRITIS, THE SECOND GROUP INCLUDED CHILDREN (12) WITHOUT ROENTGENOLOGICAL SIGNS OF PYELONEPHRITIS AND MINIMUM BIOCHEMICAL SHIFTS OF THE BLOOD, WHO WERE REGARDED AS PATIENTS WITH AN INFECTION OF THE URINARY SYSTEM. CHILDREN OF THE THIRD GROUP (26), IN WHOM IN SPITE OF THE NORMAL X RAY PICTURE OF THE KIDNEYS ALONGSIDE PROTEINURIA, LEUKOCYTURIA AND BACTERIURIA MARKED SHIFTS OF PROTEIN, LIPID AND MUCOID METABOLISM, A TENDENCY TOWARDS THE TUBULAR FUNCTION WERE OBSERVED, COULD BE REGARDED AS PATIENTS WITH THE INITIAL PYELONEPHROTIC AFFECTION OF THE KIDNEYS. FACILITY: DEP. PEDIAT., CENT. INST. POSTGRAD, MED., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.: AP0042372

Ref. Code: UR0454

JPRS 52162

Spectrophotometric Characteristics of the Jovian Red Spot

(Abstract: "Optical Properties and Structure of the Jovian Atmosphere. III. Spectrophotometric Characteristics of the Red Spot," by V. G. Teyfel', Astrophysical Institute, Academy of Sciences Kazakh SSR; Moscow, Astronomicheskii Vestnik, Vol IV, No 1, 1970, pp 34-42)

Photometric and spectrophotometric studies of change in the contrast of the Red Spot on Jupiter with approach to the limb have shown that the contrast of the spot and its changes agree with theoretical computations for a semi-infinite atmosphere and that the visible phenomenon of the Red Spot is a sector of the atmosphere and the surrounding regions filled with aerosol but with properties differing somewhat from the properties of other parts of the atmosphere. During February 1969 the author used an ASP-21 spectrograph mounted on the 70-cm AZT-8 telescope for obtaining 17 spectrograms of the Red Spot. At the time of the survey the spot was near the central meridian. Dispersion was 30.4 A/mm and resolution was about 1 A. Measurements of the absorption bands CH₄, 6190 A and NH₃, 6450 A failed to indicate any significant differences in the intensity of molecular absorption in the Red Spot and in the South Tropical Zone. However, observations of strong infrared absorption bands indicate a decrease in absorption in the spot. The density of the extremely rarefied aerosol haze forming the

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cloud cover of Jupiter is virtually identical in the spot and in the surrounding regions at depths of several tens of kilometers, whereas near the upper boundary of the haze (near the tropopause) its density is approximately 2.3 times greater in the region of the Red Spot in comparison with the South Tropical Zone.

19760325

2/2

USSR

Nickel

UDC 621.77.04:669.14.001.6

TEYMER, D. A., MARKIN, V. G., AFONINA, V. M., and RYBAKOV, P. P.

"Manufacture of Thin Strip of High-Purity Nickel-Molybdenum Alloy"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 233-237

Translation: A technology of melting is developed, providing production of NIMO-20A nickel-molybdenum alloy of high purity (as concerns content of impurities and gases). It is established that the most favorable technology is deoxidation of the liquid bath with carbon alone. A technology is developed for production of cold rolled strip 0.010-0.015 mm thick of NIMO-20A alloy. 1 figure; 1 table.

1/1

USSR

UDC 681.3

KRUGLIKOV, V. K., MAYOROV, S. A., ~~TEYMURAZOV, E. S.~~, Leningrad Institute of Precision Mechanics and Optics

"Increasing the Reliability of Detecting a Useful Signal in a Photoreadout Device"

Leningrad, Izvestiya vysshikh uchebnykh zavedeniy - Priborostroyeniye, No. 11, 1971, pp 65-67

Abstract: The basic reasons for fluctuations in the output current of a photo-reader are analyzed and a method is proposed for dynamic selection of the threshold maximizing the reliability of distinguishing a useful signal. A useful signal s is said to have a dual nature: either $s = 0$ is absent or $s = 1$ is present. A change in the supply voltage, inhomogeneity in the paper, soiling, uneven printing of the symbols, etc. result in the output current corresponding to the presence or absence of a useful signal not being stable and in extreme cases the photocurrent corresponding to the presence of a useful signal (maximum darkening) appears greater than the photocurrent from the background. The reliability of distinguishing a useful signal under a constant threshold h may not be high under such fluctuations. Contrast is suggested to

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USSR

KRUGLIKOV, V. K., et al, Izvestiya vysshikh uchebnykh zavedeniy - Priborostroyeniye, No. 11, 1971, pp 65-67

raise the reliability: a drop in the intensities of the light flow corresponding to the code 0 or 1 of the useful signal s . Fluctuations in photocurrent caused by paper inhomogeneities, soiling of the paper and uneven printing are identified with white noise, since the correlation time of these rapid fluctuations is less than the discreteness interval Δt for reading the information. Information from the paper is reduced discretely with step Δt . The output current $s_0, s_1, s_2 \dots$ then exhibits aftereffect properties so that in selecting the threshold h the probability of the appearance of a zero $P(0/s_1, s_2, \dots)$ or one $P(1/s_1, s_2, \dots)$ is taken into account under the condition that before this a certain combination s_1, s_2, \dots of zeros and ones is assumed. An expression is obtained for the optimal value of the threshold h . In an experimental test the application of this dynamic threshold decreased the number of reading errors by a factor of approximately 2.8.

2/2

USSR

UDC: 621.793

VITKIN, A. I. and TEYNDL, I. I.

Metal Coatings of Sheet and Strip Steel (Metallicheskiye pokrytiya listovoy i polosovoy stali), Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references.

The book, a joint effort by Soviet and Czech authors, outlines the fundamentals of the theory and technology of applying metal coatings to sheet steel. Considerable attention is given to the structure of the coating, the phase composition of intermediate layers, corrosion processes as well as the uses of protected rolled stock in the national economy. The book is intended for engineering, technical and scientific personnel engaged in the production and studies of protective coatings (hot, electrolytic, vacuum and others) and may be valuable to students specializing in this field.

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references.

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USSR

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings, of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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USSR

VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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USSR

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Instruments and Measurements

USSR

UDC 681.888.212

MANULIS, B.M., ~~TEYTEL'MAN, A.V.~~, MANULIS, M.N.

"Digital Depth Indicator"

USSR Author's Certificate No 255081, filed 2 July 68, published 12 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 3, March 71, Abstract No 3A433A)

Translation: A precise and interference-free digital depth indicator (DDI) is proposed. The DDI is provided with a unit for quenching a digital signal panel, which is connected between the second output of the control trigger and the input of the decoder. The exclusion unit of the DDI is fulfilled in the form of a trigger, the input of which is connected with a triggering [zapusk] unit and with the output of the timer and the AND circuit. The input of the AND circuit is connected to the exclusion trigger and the unit for distribution of the echo signal, and its output to the control trigger. Introduction into the circuit of the DDI of the unit for quenching a signal panel assures its quenching during measurement of depth. The exclusion unit eliminates presentation of false responses. A block diagram of the device and a detailed description of its operation are presented. The device can find an application in sonic depth finders. 1 ill. N.B.

1/1

1/2 037 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DIETHYLPHOSPHONACETALS OF POLY VINYL ALCOHOL -U-

AUTHOR--(05)--LEVIN, YA.A., GAZIZOVA, L.KH., YAGFAROVA, T.A., KOVALENKO,
V.I., TEYTELBAUM, B.YA.
COUNTRY OF INFO--USSR

SOURCE--VVSOKOMDL. SOEDIN., SER. A 1970, 12(3), 574-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ACETAL, ORGANIC PHOSPHORUS COMPOUND, POLYVINYL ALCOHOL,
POLYMER, ELASTIC DEFORMATION, POLYMER CROSSLINKING, ESTERIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1208

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CIRC ACCESSION NO--AP0116673

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116673

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

ABSTRACT. POLY(VINYL ALC.) (I) WAS ACETALATED WITH (ETO) SUB2 P (O)CH SUB2 CHO IN THE PRESENCE OF CF SUB3 CO SUB2 H AND H SUB2 O AT 60DEGREES TO GIVE A WHITE, RUBBERLIKE POLYMER (CONTG. LESS THAN OR EQUAL TO 8PERCENT P) IN 85-100PERCENT YIELD. IR SPECTRA AND THERMOMECH. TESTS SHOWED THAT THE POLYACETALS (II) (CONTG. 10PERCENT ACETALS GROUPS) WERE MORE SUSCEPTIBLE TO ELASTIC DEFORMATIONS THAN I, PRESUMABLY DUE TO DECREASED MOL. INTERACTION. INCREASED RIGIDITY, OBSD. IN II (CONTG. GREATER THAN 20PERCENT ACETAL GROUPS) HEATED TO 150-200DEGREES, WAS ATTRIBUTED TO CROSSLINKING OCCURRING DURING TRANSESTERIFICATION OF P(OET) SUB2 GROUPS WITH ADJACENT OH GROUPS.

FACILITY: INST. ORG. FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

SPRS 58208
6-73

TEZLEVAN, V. YE.

V. YE.

VIII-10. GROWTH OF SINGLE CRYSTALS OF SOME SEMICONDUCTOR COMPOUNDS WITH SPINDLE STRUCTURE

Article by S. I. Raduyevan, N. I. Vaykovskaya, K. J. Shetkin, V. E. Tezlevan, Institute of Applied Physics of the Kazan SSR Academy of Sciences, Kazan, U.S.S.R.; Novolishensk, III Stremozim na Prilezskan Rnata i Sineza Poluprovodnikov, OYKH Kirzhailov i Plena, Kuzbass, 12-17 June 1971, p 112

The majority of semiconductor compounds with spindle structure are characterized by a high melting point. Therefore, in order to grow single crystals of certain compounds in this group, In₂S₃, CuIn₂S₄, CuIn₃S₅, AgIn₂S₃ and also solid solutions based on them, the method of chemical transport reaction was used.

A study was made of the most probable reactions presenting transport of compounds permitted discovery. The study of the transport kinetics of single crystals from by the method of chemical transport kinetics of the have octahedral faceting. The laws of different transport reactions basically stated that repeatedly growing facets have [111] direction and epitaxial growth. The crystal growth facets have [111] direction and are C-type surface permitting reduction of the number of crystallization centers to a minimum.

The large crystals of the indicated compounds were obtained by a method of zone recrystallization. Technological conditions were developed for which the synthesis of the material and growth of single crystals were combined in one cycle. In the specimens obtained, a study was made of the effect of the etching agents. The selective etching agents permitted discovery of the dislocation picture formed around the impurities and scratches. Studies were also made of some physical properties of the named compounds. Studies

1/2 016

TITLE--RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM -U- UNCLASSIFIED PROCESSING DATE--04DEC70

AUTHOR--(05)--BYSTROVA, N.V., GOSSACHINSKIY, J.V., TGOROVA, I.M., ROZANOV, V.M., RYZHKOV, N.F. COUNTRY OF INFO--USSR, SWITZERLAND

SOURCE--THE SPIRAL STRUCTURE OF OUR GALAXY; PROCEEDINGS OF THE SYMPOSIUM, UNIVERSITAT BASEL, BASEL, SWITZERLAND, AUGUST 29-SEPTEMBER 4, 1969. DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--RADIO TELESCOPE, SPIRAL GALAXY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/505030/F03 STEP NO--CZ/0000/70/000/038/0169/0172

CIRC ACCESSION NO--AT0141875

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0141875

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM MADE WITH THE LARGE PULKOVO RADIOTELESCOPE (BEAMWIDTH 7 MIN, BANDWIDTH 20, AND 10KHZ). DRIFT CURVES ACROSS THE CLUSTER NGC 2264 AT DIFFERENT VELOCITIES RELATIVE TO THE LSR ARE PRESENTED, AS WELL AS OBSERVED DRIFT CURVES AT DIFFERENT VELOCITIES ACROSS LAMBDA ORIONIS. FACILITY: GLAVNAIA ASTRONOMICHESKAIA, OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--INFLUENCE OF THE STRUCTURE OF NDCL SUB3
MELTS ON THEIR REACTION WITH OXYGEN -U-
AUTHOR-(02)-MOROZOV, I.S., THIEN, P.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1667-73

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLTEN CHLORIDE, OXIDATION, FLUID STRUCTURE, POTASSIUM
CHLORIDE, SODIUM CHLORIDE, RARE EARTH COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1393

STEP NO--UR/0078/70/015/006/1667/1673

CIRC ACCESSION NO--AP0135067

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135067

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

ABSTRACT.

THE REACTION OF $\text{NdCl}_3 \cdot 6\text{H}_2\text{O}$ WITH ATM. O IN FUSED KCl OR NaCl WAS STUDIED AT 800 DEGREES. COMPN. OF SOLID AND LIQ. PHASES ARE TABULATED. PHASE DIAGRAMS OF $\text{NdCl}_3 \cdot 6\text{H}_2\text{O}$ - YCl_3 - KCl , $\text{NdCl}_3 \cdot 6\text{H}_2\text{O}$ - YCl_3 - NaCl , AND $\text{NdCl}_3 \cdot 6\text{H}_2\text{O}$ - NaCl SYSTEMS ARE CONSTRUCTED TO ELUCIDATE THE INTERACTIONS OF RARE EARTH CHLORIDES WITH THE CHLORIDE USED AS A FUSED SOLVENT. EFFECTS OF THE NATURE OF SOLVENTS ON REACTIONS WITH O ARE DISCUSSED.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--SURFACE STATE OF AN IRIIDIUM ELECTRODE STUDIED BY MEANS OF
ISOELECTRIC SHIFTS IN POTENTIAL -U-
AUTHOR--(02)-PETRIY, O.A., THIEU, N.V.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIIMIYA 1970, 6(3), 408-11

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--IRIDIUM, ELECTRODE POTENTIAL, METAL ELECTRODE, POTASSIUM
BROMIDE, HYDROXIDE, IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1729

STEP NO--UR/0364/70/006/003/0408/0411

CIRC ACCESSION NO--AP011555B

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0115558

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEPENDENCES OF ISOELEC. SHIFTS IN POTENTIAL AND ADSORPTION GAMMA H PRIME POSITIVE OF H IONS ON THE IR ELECTRODE POTENTIAL FOR 0.001N KOH, 0.01N KOH PLUS N KBR, 0.01N KOH PLUS N KI, AND 0.01N KBR PLUS N KBR ARE PRESENTED. TECHNIQUE OF THE MEASUREMENTS, PREPN. OF IR ELECTRODE, AND DETN. OF ITS REAL SURFACE ARE DESCRIBED EARLIER (CA 70: 120513M). ISOELEC. SHIFTS IN POTENTIAL ARE DETD. AT 20DEGREES FOR THE CHANGES OF 0.001N KOH TO 0.1N KOH, OR 0.001N KOH (OR HBR) PLUS 0.009N KI (OR KBR) TO 0.1N KOH (OR HBR) PLUS 0.91N KI (OR KBR). THE PHI SUBR POTENTIALS ARE GIVEN IN RELATION TO THE REVERSIBLE H ELECTRODE IN THE SAME SOLN. FROM ISOELEC. SHIFTS IN POTENTIAL AND EQUIL. CHARGE CURVE THE DEPENDENCE OF THE H ION ADSORPTION ON THE POTENTIAL IS CALCD. THE CALCN. IS ACHIEVED WITH THE SUE OF AN EQUATION DERIVED PREVIOUSLY (CA 69: 73416Z). THE DEPENDENCES CALCD. ARE COMPARED WITH THOSE FOUND EXPTL. BY TITRATING THE SOLN. POTENTIALS, FOR WHICH GAMMA SUBH PRIME POSITIVE EQUALS 0, ARE THE SO CALLED ZERO CHARGE POTENTIALS PHY SUBZ.CH. IN ALK. IODIDE SOLN., 2 POINTS OF ZERO CHARGE FOR PHI SUBR EQUALS 0.11 AND 0.75 V EXIST. THE 1ST POINT CORRESPONDS TO THE REDN., THE 2ND ONE TO THE OXIDN. SURFACE STATE. THE DEPENDENCES OF PHI SUBZ.CH. ON PH ARE PRESENTED. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 030
UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--RELATIVISTIC GAS SPHERES AND CLUSTERS OF POINT MASSES WITH
ARBITRARILY LARGE CENTRAL REDSHIFTS: CAN THEY BE STABLE -U-
AUTHOR--(02)-BISNOVATYIKOGAN, G.S., THORNE, K.S.
COUNTRY OF INFO--USSR
SOURCE--ASTROPHYS. J. (USA), VOL. 160, NO. 3, PT. 1, P. 875-86 (JUNE 1970)
DATE PUBLISHED----JUN70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--RELATIVISTIC QUANTUM MECHANICS, STAR CLUSTER, PERTURBATION,
PLASMA STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605004/E06 STEP NO--US/0000/70/160/003/0875/0886
CIRC ACCESSION NO--AP0139664
UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0139664
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. RECENTLY BISNOVATYI-KOGAN AND ZEL'DOVICH HAVE CONSTRUCTED GENERAL RELATIVISTIC MODELS OF GAS SPHERES AND OF COLLISIONLESS STAR CLUSTERS, FOR WHICH THE REDSHIFT FROM THE CENTER TO INFINITY IS ARBITRARILY LARGE; AND THEY HAVE SPECULATED THAT THE PARTICULAR MODELS MIGHT BE STABLE AGAINST SMALL PERTURBATIONS. IN THIS PAPER IT IS PROVED THAT THE GAS SPHERES ARE, INDEED, STABLE AT LEAST AGAINST RADIAL PERTURBATIONS. AS FOR THE CLUSTERS, THE MOST POWERFUL TECHNIQUES YET DEvised YIELD INCONCLUSIVE RESULTS FOR STABILITY. HOWEVER, FROM THE BEHAVIOR OF THE CLUSTERS UNDER SCRUTINY BY THOSE TECHNIQUES, THE AUTHORS BELIEVE THAT PROBABLY THEY ARE STABLE.

FACILITY: ACAD. SCI., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--1506170

SPIN PROBE METHOD FOR STUDYING ORIENTED POLYMERS -U-
AUTHOR--(05)-STRYUKOV, V.B., ROZANTSEV, E.G., KASHLINSKIY, A.I., MALTSEVA,
M.G., TIBANOV, I.F.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 895-7
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--AMORPHOUS POLYMER, POLYETHYLENE TEREPHTHALATE, CAPRONE,
CAPROLACTAM, POLYPROPYLENE FIBER, ORGANIC OXYGEN COMPOUND, ROTATION
SPECTRUM, ELECTRON PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/2009

STEP NO--UR/0020/70/190/004/0895/0897

ARC ACCESSION NO--ATJ112964

UNCLASSIFIED

ABSTRACT NO--AT0112964

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGES OCCURRING IN THE AMORPHOUS REGIONS OF POLY(ETHYLENE TEREPHTHALATE) (LAVSAN) (I), POLYCAPROLACTAM (KAPRON) (II), AND POLYPROPYLENE (III) UPON ELONGATION OF I, II, AND III FIBERS WERE STUDIED BY USING 2,2,6,6-TETRAMETHYL-4-OXOPIPERIDINOXY RADICAL (IV) AS A PROBE AT SIMILAR TO 9300 MHZ. THE ROTATION OF IV WAS GREATLY INHIBITED IN I DOWING TO THE HIGH RIGIDITY OF ITS AMORPHOUS REGIONS; ON THE OTHER HAND, IN STRETCHED AND ORIENTED I OR II YARN, IV MOVED RATHER FREELY IN CERTAIN REGIONS OF THE POLYMER, SUGGESTING THE FORMATION OF MICROCAVITIES IN THE AMORPHOUS REGION OF THE POLYMER. THE ROTATION OF IV IN III FIBERS WAS GREATLY INHIBITED (THE ROTATIONAL DIFFUSION COEFF. DECLINED BY A FACTOR OF 10), INDICATING THAT THE RIGIDITY OF AMORPHOUS REGIONS OF III MARKEDLY INCREASED DURING THE FORMATION OF ORIENTED FIBERS.

INST. KHIM. FIZ., MOSCOW, USSR.

FACILITY:

UNCLASSIFIED

USSR

UDC 547.555+547.297

SVIRSKAYA, P. I., STREBULAYEVA, A. I., NEGREBETSKIY, V. V.,
~~TIBANOV, P. V.~~, VASIL'YEV, A. F., and BASKAKOV, Yu. A., All-
Union Scientific Research Institute of Chemical Agents for Plant
Protection

"Hydroxylamine Derivatives With Herbicidal Activity. 42. Reactions
of Derivatives of N-Carbamoyl-N-arylhydroxylamines with Halides of
Haloalkylcarboxylic Acids"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 6, Jun 73,
pp 1163-1171

Abstract: N-Carbamoyl-N-arylhydroxylamine derivatives, on react-
ing with halides of alpha- and beta-halopropionic acids, formed
N-substituted O-alpha- or O-beta-halopropionyl derivatives of
carbamoyl-N-arylhydroxylamines. Under the action of bases, O-beta-
chloropropionylhydroxylamines were hydrolyzed to the initial
hydroxylamines. Depending on the conditions of the reaction and
the nature of the substituents, the N-substituted O-alpha-halopro-
pionyl derivatives of carbamoyl-N-arylhydroxylamines, on being
subjected to the action of bases, either split off hydrogen halide
with the formation of O-acryloyl derivatives or underwent cycliza-
tion with the formation of 2-aryl-4-(alkyl)aryl-5-methyl-1,2,4-
1/2

USSR

SVIRSKAYA, P. I., et al., Zhurnal Organicheskoy Khimii, Vol 9,
No 6, Jun 73, pp 1163-1171

oxadiazine-3,6-diones. At high temperatures the O-alpha-halo-
propionyl and O-acryloyl derivatives readily underwent rearrange-
ment into the corresponding derivatives of o-aminophenol. In the
presence of triethylamine the O-alpha-halopropionyl-N-alkylcar-
bamoyl-o-aminophenols were converted as a result of recyclization
into N-alpha-halopropionyl-N-alkylcarbamoyl-o-aminophenols. The
compounds that have been synthesized and their physical proper-
ties are listed in tables.

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USSR

UDC

SVIRSKAYA, P. I., STREBULAYEVA, A. I., ~~TIBANOV, P. V.~~ and BASKAKOV, Yu. A.,
All Union Scientific Research Institute of Chemicals for the Protection of Plants

"Hydroxylamine Derivatives with Herbicidal Properties. XLI. Halogenation
Reactions of N-Carbamoylhydroxylamine Derivatives

Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6, June 1972, pp 1217-1224

Abstract: Bromination of N-alkyl(aryl)carbamoyl-N-aryl(alkyl)-hydroxylamines with
molecular bromine in aprotic inert solvent media produced corresponding n-bromo
substituted derivatives. In the case of N-arylcarbamoyl-N-aryl-hydroxylamines
the bromine atom attacks, first of all, the ring adjoining the hydroxylamine
group. Only in the case of N-alkylhydroxylamines and para substituted N-aryl-
hydroxylamines bromination of aryl radical of the carbamoyl group occurs. The
structure of bromination products was proven by reverse reaction synthesis and
analysis of derivatives. The IR spectra contain OH and NH bonds which corre-
spond to the appropriately located NOH, NH and CO groups. Bromination of
N-allylcarbamoyl-N-arylhydroxylamines involves initially the addition of Br₂ to
the double bond and subsequent halogenation of the ring. At 20 - 30° C the re-
action is more complex due to simultaneous rearrangement involving the migration
of hydroxyl group from the nitrogen to the ring. At lower temperatures the rate
of bromination reaction is too low. Bromination of N-allylcarbamoyl-N-aryl-
hydroxylamines produces N-2,3-dibromopropylcarbamoyl-N-arylhydroxylamines and
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Svirskaya, P. I., et al, Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6,
June 1972, pp 1212 - 1224

the products of their rearrangement -- N-2,3-dibromopropylcarbamoyl-O-aminophenols. In concentrated hydrochloric acid or in acetone solution saturated with HCl gas N-allylcarbamoyl-N-arylhydroxylamines form N-allyl-N¹-n- or -O-chloroarylurea. Reaction with hydrogen bromide results in the formation of the reduction products: N-allyl-N¹-arylurea.

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USSR

BASKAKOV, Yu. A., VOLOVNIK, L. L., VASIL'EV, A. F., ARYUTKINA, N. L.,
TIBANOV, P. V., and NEGREBETSKIY, V. V.

"Herbicial Derivatives of Hydroxylamine. XXIV. The Reaction of Halides
of Haloacetic Acids with Hydroxylamine Derivatives of Thiourea"

Khimiya Geterotsikl. Soyedin. [Chemistry of the Heterocyclic Compounds --
Collection of Works], No 3, Riga, Zinatne Press, 1971, pp 104-107. (Trans-
lated from Referativny Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No
5N676 by the authors)

Translation: The reaction of ClCH_2COCl with N-methylthiocarbamoyl-O-methyl-
hydroxylamine (I) without any HCl acceptor produces 2-methoxyimino-3-methyl-
4-oxo-1, 3-thiazolidinium (II), which is converted by heating in MeOH to 2-
methoxyimino-3-methyl-1, 3-thiazolidin-4-one (III). Two point two (2.2) g
 ClCH_2COCl is added to a solution of 2.4 g I in 100 ml ether at -20° , mixed
for 2 hours (after which the temperature of the mixture is about 20°) and
3.6 g II are separated, yield 94 %, mp 160° (in a sealed capillary). A
solution of II in MeOH is heated 1-2 hr on a water bath, the MeOH is dis-
tilled under vacuum, producing III, yield about 100 %, mp 88° . For a
previous report see *RZhKhim*, 1969, 4B1038.

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USSR

UDC 630:54:541.571.9:547.871

TIBANOV, P. V., VASIL'YEV, A. F., BASKAKOV, Yu. A., LEVINSKIY, B. N., and
MEL'NIKOVA I. A., All-Union Scientific-Research Institute of Chemical
Agents for Plant Protection

"Herbicidal Derivatives of Hydroxylamine. XL. Energy of the Intramolecular
Hydrogen Bond, and the Structure of Associates of O-Methylhydroxylamine
Derivatives of sym-Triazines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 1972, pp 124-127

Abstract: Experimental data have already suggested that simplification of
methods and calculations for finding both the energy of the intramolecular
bond, and the dimer-monomer entropy difference, will not substantially affect
the accuracy of the results. Using the temperature relationship of the
equilibrium constants, as determined by the ebullioscopic and cryoscopic
methods, the authors determined both of the constants in question for seven
compounds of the symtriazine group. Also obtained were the infrared spectrum
for a solution of 2-chlor-4-di-propylamino-6-methoxyamino-sym-triazine in
hexachlorobutadiene, and the relationship between (1) the association factor
($f = \bar{M}/M$, where \bar{M} is the measured molecular weight, and M is the molecular
weight of the monomer, and (2) the molar concentration. Figures for the
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USSR

TIBANOV, P. V., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 1972, pp 124-127

intramolecular H bond energy and the dimer-monomer entropy difference turned out to be very close to those obtained by the accurate method of "peak" band intensities. The various data obtained are summarized in tables and graphs.

2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--HERBICIDE DERIVATIVES OF HYDROXYLAMINES. XXXII, SYNTHESIS AND
REACTIONS OF N,ARYLCARBAMOYL,N,ARYLHYDROXYLAMINES --U-
AUTHOR--(05)-SVIRSKAYA, P.I., BASKAKOV, YU.A., VASILYEV, A.F., TIBANOV,
P.V., STREBULAYEVA, A.I.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL ORGANICHESKOY KHIMII, 1970, VOL 6, NR 2, PP 292-300
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HERBICIDE, HYDROXYLAMINE, CHEMICAL SYNTHESIS, INSECTICIDE,
FUNGICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1201 STEP NO--UR/0366/70/006/002/0292/0300
CIRC ACCESSION NO--AP0130215
UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0130215
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. THE TITLE COMPOUNDS CONTAINING VARIOUS SUBSTITUENTS IN BOTH AROMATIC RINGS WERE PREPARED BY THE REACTION OF ARYLHYDROXYLAMINES WITH ARYL ISOCYANATES X SUBN C SUB6 H SUB5MINUSM NHOH PLUS Y SUBM C SUB6 H SUB5MINUSM NCO YIELDS X SUBN C SUB6 H SUB5MINUSM H(OH)CONHC SUB6 H SUB5MINUSM Y SUBM. COMPOUNDS I WHERE X EQUALS 4,CH SUB3 ARE THE LEAST STABLE AND DECOMPOSE ON SLIGHT HEATING, OR EVEN ON RECRYSTALLIZATION FROM METHYLENE CHLORIDE. THE FREE HYDROXYL GROUP IN COMPOUNDS I CAN BE READILY ACYLATED WITH ACID ANHYDRIDES AND ACYL CHLORIDES TO FORM COMPOUNDS II X SUB N C SUB6 H SUB5MINUSM N9DCOR)CONHC SUB6 II SUB5MINUSM Y SUBM. COMPOUNDS I AND II ARE PRACTICALLY INACTIVE AS INSECTICIDES, BUT SOME OF THEM ARE SYSTEMIC FUNGICIDES.

FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT KHIMICHESKIKH SREDSTV ZASHCHITY RASTENIY.

UNCLASSIFIED

USSR

UDC 547.238+632.954

SVIRSKAYA, P. I., BASKAKOV, YU. A., SHVINDLERMAN, G. S., KUSKOVA,
~~N. B.~~ VASIL'YEV, A. F., and TIBANOV, P. V., All-Union Scientific
Research Institute for Chemical Means of Plant Protection, Moscow,
State Committee for Chemistry USSR

2

"Herbicidal Derivatives of Hydroxylamine
XXIX. N-Arylcarbamoyl-N-alkylhydroxylamine and Their Derivatives"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 274-280

Abstract: The N-arylcarbamoyl-N-alkylhydroxylamines were obtained by reacting arylisocyanates with N-alkylhydroxylamines or their chlorohydrates in inert organic solvents such as benzene, toluene, ethyl acetate, in which the reaction is quite energetic. The products formed are insoluble in these solvents, giving almost quantitative yields of quite pure materials. The reaction of arylisocyanates with alkylhydroxylamines hydrochlorides could be carried out in aqueous ether or aqueous ethyl acetate. Acetates were prepared by known methods but proved to be unstable in presence of acids and bases. Some of the O-acyl-N-arylcarbamoyl-N-methylhydroxylamines exhibited high and quite selective herbicidal activity.

i/l

USSR

UDC 547.435.2 + 547.238 + 632.954 7

SVIRSKAYA, P. I., BASKAKOV, YU. A., VASIL'YEV, A. F., TIBANOV, P. V.,
and STREBULAYEVA, A. I., All-Union Scientific Research Institute for
Chemical Means of Plant Protection, Moscow, State Committee for
Chemistry USSR

"Herbicidal Derivatives of Hydroxylamines
XXXII. Synthesis and Reactions of N-arylcarbamoyl-N-arylhydroxyl-
amines"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 292-300

Abstract: The authors synthesized a series of variously substituted N-arylcarbamoyl-N-arylhydroxylamines and their acetates by reacting arylhydroxylamines with arylisocyanates in anhydrous organic solvents. The products were checked for herbicidal activity but were practically inactive. Some exhibited fungicidal activity of the systemic type. The acetates proved to be more stable compounds with high melting points. Studies of IR spectra have shown that in solution these hydroxylamines prefer a trans form; when the concentration is increased the cis form begins to show up. The acetates showed spectra which led to the conclusion that they may have cis-trans conformations not only of the CONH group, but also of aryl and acyl groups.
1/1

USSR

UDC 621.70

TIBANOV, V. P., Engineer

"The Effect of Cyclic Bending Stresses on the Cross-Breaking Strength and Plasticity of Steel by Room and Low Temperatures" (Article presented by Candidate of Technical Sciences D. N. Reshetov, Professor of Moscow Higher Technical School imeni N. E. Bauman)

Moscow, IVUZ, Mashinostroyeniye, No 2, 1972, pp 15--19

Abstract : The effect of cyclic bending stresses on the cross-breaking strength and plasticity was investigated on smooth and notched specimens of steel 40Kh at the Moscow Higher Technical School imeni N. E. Bauman, Chair of Machine Details. The 40Kh steel (0.43 % C , 0.61 % Mn , 0.25 % Si , 0.38 % Cr , 0.02 % S , and 0.02 % P) has been subjected to thermal treatment, its hardness was 28--30 HR3. The specimens got the initial cyclic loading at temperatures of +20 °C and -50 °C. Their mechanical properties after fatigue damages were investigated by tensile tests. The investigation results are analyzed by reference
1/2

USSR

TIBANOV, V. P., IVUZ, Mashinostroyeniye, No 2, 1972, pp 15-19

to tabulated initial loading conditions and diagrams showing tensile strength and relative narrowing (or elongation) dependences on the level of cyclic stresses and the relative loading duration. On the basis of the experimentally revealed high susceptibility of notched specimens to cyclic stresses observed by low temperature tests, the accumulation of possible fatigue defects by overloadings can be regarded as one of sources of more frequent failure of details of machines operating at low temperatures. Three illustr., one table, six biblio. refs.

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USSR

UDC 681.325.5

LIMEZH, G. K., TARDENAK, E. E., ~~TIBERG, Ya. F.~~ Latvian "Order of the Red Banner of Labor State University imeni Petr Stuchka

"An Analog-Digital Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326725, Division H, filed 23 Mar 70, published 19 Jan 72, p 213

Translation: This Author's Certificate introduces an analog-digital converter with digit-by-digit balancing. The converter contains a null indicator, a programmed logic device and a digital-analog converter. As a distinguishing feature of the patent, the device is designed for improved accuracy in measuring the ratio between two voltages in digital form. The unit contains a controllable shunt made in the form of parallel-connected conductances and switches. The shunt is connected in parallel with the output of the digital-analog converter, and the controlling inputs of the shunt are connected to the output of the programmed logic device.

1/1

USSR

UDC 621.373:535(206.3)

MISHAKOV, V. G., ~~TIBILOV, A. S.~~, and SHUKHTIN, A. M.

"Generation of Radiation in Na-H₂ and K-H₂ Mixtures During Pulsed Introduction of Metal Vapors into a Gas-Discharge Plasma"

Leningrad, Optika i Spektroskopiya, Vol XXXI, No 2, Aug 71, pp 324-325

Abstract: Generation of radiation in Na-H₂ and K-H₂ mixtures was produced in cold discharge tubes by the method of pulsed introduction of metal vapors into a gas-discharge plasma. This method, which eliminates the need for a heating element, involves the transmission of two current pulses through a discharge tube on the wall of which is a metallic layer of sodium (Na) or potassium (K). The first current pulse strips metal atoms from the walls of the tube and creates mixtures of Na-H₂ or K-H₂. The metal vapors thus obtained are excited by the second current pulse, and radiation is generated. It was discovered that when the length of the first current pulse was increased, the generation of radiation on its trailing edge increased greatly in length, achieving a length of 300 microseconds. Several interesting new facts were established experimentally about generation of this type.

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USSR

UDC: 534

TIBILOV, T. A.

"Asymptotic Methods of Studying the Vibrations of Rolling Stock"

Tr. Rostov-na-Donu inzh. zh.-d. transp. (Works of the Rostov-na-Donu Institute of Railway Transportation Engineers), 1970, vyp. 78, pp 1-224 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4A279)

Translation: The paper deals with the study of nonlinear oscillatory processes caused by motion of a car over a railroad.

In the first chapter, Krylov-Bogolyubov-Mitropol'skiy asymptotic methods and B. V. Bulgakov's method of normal coordinates are used as a basis for developing mathematical apparatus to study the dynamic processes which take place during motion of the car. The car is modeled by a nonlinear oscillatory system with many degrees of freedom containing appreciably nonconservative forces. Self-oscillations are considered as well as forced oscillations in resonance and non-resonance modes.

In the second chapter, an analytical method is developed for studying the motion of a generalized car in the presence of random perturbations. A method is outlined for finding the statistical characteristics of gener-

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TIBILOV, T. A., Tr. Rostov-n/D in-ta inzh. zh.-d. transp., 1970, vyp. 78, pp 1-224

alized coordinates of a nonlinear oscillatory system with many degrees of freedom subjected to stochastic and deterministic forces.

The third chapter investigates periodic modes of oscillation of a double-axle trolley, assuming that the wheel flanges on the first axle run against the lateral faces of the rail heads. Conditions are found for stability of this type of motion. The problem of self-oscillations of a double-axle trolley in the presence of random perturbations is analyzed within the framework of the theory of Markov processes. Computational formulas are derived for predicting the probability densities for the amplitude.

In the fourth chapter, differential equations of motion are set up for a car with cradel suspension of the body as an oscillatory system with nineteen degrees of freedom. Formulas for calculating the natural oscillations of the car are derived for a simplified system with regard to the effect of linear and nonlinear hydraulic shock absorbers. Parametric oscillations of the body are studied in the linear and nonlinear formulation.

In the fifth chapter, differential equations of motion are set up for the VL-60 electric locomotive as an oscillatory system with seventeen degrees of freedom with regard to tire wear.

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TIBILOV, T. A., Tr. Rostov-n/D in-ta inzh. zh.-d. transp., 1970, vyp. 78,
pp 1-224

The sixth chapter considers vertical oscillations of cars. Nonlinear differential equations are derived for a car as a system with eight degrees of freedom. Critical damping is found for a two-mass system with Coulomb friction. A method is developed for calculating the effect of random forces on a two-mass system with Coulomb friction. I. V. Ignatov.

USSR

UDC 616.936.2-085.926-039.71

TIBURSKAYA, N. A., SERGIYEV, P. G., MORKOVKIN, V. M.; Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR, and First City Psychiatric Clinical Hospital imeni P. P. Kashchenko

"Radical Chemoprophylaxis of Three-Day Malaria of Two Incubation Types with the Shorter Incubation Type Predominating"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 431-433

Abstract: Research was conducted at the First City Psychiatric Clinical Hospital imeni P. P. Kashchenko on patients requiring malaria therapy. Forty-seven patients were infected with strain *P. vivax* via mosquito bite producing malaria of two incubation types, with predominance of the shorter incubation on types. Of the 25 patients in the experimental group, 14 received bionycin; and 11 received chloridine, with 5 also receiving quinocide 5 months after infection. Results showed that patients receiving bionycin in doses of 2 g daily over seven incubation days and patients receiving chloridine in doses of 0.05 g daily over the first 3 incubation days showed no primary disease manifestations. Subsequent relapses were not eliminated, however. Daily 0.05 g doses of chloridine over 3 incubation days and with quinocide in 0.03 g daily 1/2

USSR

TIBURSKAYA, N. A., et al., Meditsinskaya Parazitologiya i Parazitinyye Bolezni, Vol 40, No 4, Jul/Aug 71, pp 431-433

doses over a 10 day period within 5 months of infection eliminated initial and relapse symptoms of the disease.

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USSR

UDC 547.781.2.07

POPILIN, O. N., TICHSHENKO, ~~V. G.~~ Khar'kov Institute of Public Feeding,
All-Union Scientific Research Institute of Single Crystals, Scintillation
Materials and Highly Pure Chemicals, Khar'kov

"Synthesis of Some 1-Substituted 2,5-Diphenylimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1264-1265

Abstract: Derivatives of 1,2,5-triphenylimidazole were prepared by the reaction of ω -benzoylaminoacetophenone with primary aromatic amines in the presence of phosphorus trichloride. For the ρ -substituted compounds the yields were 50-60% and for the o -substituted compounds, 20-30%. An effort to introduce an aliphatic amine (*n*-propylamine) into the reaction only gave traces of the substituted imidazole.

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UDC 621.397:621.396.4

USSR

BELENKIY, Ya. Ye., MIKHALEVSKIY, V. I., ~~ELDENKO~~, A. G., TSERKOVNYUK, E. A.

"Device for Automatic Supervision of Test Lines and Their Division into a Given Number of Intervals"

Otbor i peredacha inform. Resp. mezhved. sb. (Information Sorting and Transmission. Republic Interdepartmental Collection), 1970, vyp. 23, pp 77-82 (from RZh-Radio-tekhnika, No 8, Aug 70, Abstract No 8G220)

Translation: This article contains a description of an economical transistor unit permitting automatic separation of arbitrary TV signal line intervals and also separation of them into a given number of intervals. The pulse train generated by the unit realizes control of the transducers for shaping test signals of complex shape. The bibliography has three entries.

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Acc. Nr:
AP0037224

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 292 - 293

MODIFICATION OF THE METHOD FOR THE RENAL ARTERY
CATHETERIZATION

Totrova, E. A.; Yezhov, V. F.; Tidzhiyev, V.
Dept. of Normal Physiology. North-Osetia Medical Institute, Ordzhonikidze

Experiments on the 60 female dogs showed a possibility of introduction of a catheter into the renal artery through the left upper lumbar artery. This method proved to be more advantageous as compared with those used at present, as it provided a possibility to influence the renal function by various drugs administered right into the renal arterial blood flow.

D.H.

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USSR

UDC: 538.1

KAMENSKIY, V., TIGANE, Anu, Institute of Theoretical Physics imeni L. D. Landau, Academy of Sciences of the USSR; Institute of Thermal Physics and Electrophysics, Academy of Sciences of the EstSSR

"Absorption of Light in Ferromagnetics Close to the Curie Point"

Tallin, Izvestiya Akademii Nauk EstSSR: Fizika, Matematika, Vol 22, No 2, 1973, pp 159-163

Abstract: A diagram technique for interacting spins proposed by V. G. Vaks, A. I. Larkin, and S. A. Pinkin is applied to determination of the variation, with frequency and temperature, of the permittivity in ferromagnetics close to the transition temperature. The procedure involves finding successive approximations of the self-consistent field. The results are used to determine the attenuation of light as a function of frequency and temperature. The results are compared with other theories.

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USSR

UDC 632.95

FIGANE, E. YU.

"Separation of Pure Pesticides from Their Technical Mixtures for Use as Analytical Standards"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya ini produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 373-375 (from RZh-Khimiya, No 12, June 1972, Abstract No 12N416)

Translation: In order to separate organophosphorus pesticides (phosalone, phosphamide, anthio) from the concentrate, the emulsions are extracted with n-hexane; after several hours the upper layer is separated, they are left to stand to evaporate the solvent, and the pesticide crystals are obtained (phosalone, melting point 48°). In order to isolate desmethrin (I) from the 25% wetttable powder, it is extracted with ether in a Soxhlet apparatus for 4 hours, the extract is concentrated, the residue is cooled, I precipitates is dissolved in C₆H₆, filtered, n-hexane is added, and I is obtained, melting point 84-6° and melting point 85-6° (reprecipitated from acetone with water). In order to isolate sevin (II) from 50% wetttable powder, it is extracted by dimethylformamide (80%), the extract is cooled, the crystals are separated and dissolved in acetone diluted with n-hexane and II with a melting point of 141.5-42° is obtained.

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USSR

UDC: None

MERMANISHVILI, L. L., TIGILAURO, G. A., SIMONISHVILI, T. G.,
KVANTALIANI, G. A., and KOVSHOV, L. F.

"Device for Recording Information on Electrochemical Paper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrasty, tovarnyye znaki,
No 4, 1973, p 117, No 364003

Translation: The item contains number registers connected with decoders whose outputs are joined to shapers connected through AND circuits with the inputs of the recording unit, which is connected with scaling and synchronization units, distinguished in that, for the purpose of providing printed information in the form of combinations of points in two colors, it contains an automatic marking unit connected with the inputs of a nulling device for the number registers and with controlling inputs from each of the decoders.

The device of paragraph 1 above is distinguished in that the count input of the channel counter in the automatic marking unit is connected, through one of the delay lines, to one of the AND and OR circuits respectively, the outputs of which are connected through a decoder to the second inputs of the AND circuits, whose outputs are connected with the other inputs of the OR circuits.

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USSR

UDC: 681.333:621.391

KULAKOV, S. V., RAZZHIVIN, B. P., TIGIN, D. V., SOKOLOV, S. I.

"An Optico-acoustic Device"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 15, Apr 73, Author's Certificate No 374633, Division G, filed 18 Jun 71, published 14 Jul 73, p 112

Translation: This Author's Certificate introduces an optico-acoustic device which contains a delay circuit and electronic amplifiers, and installed on the optical axis: a light source, condenser, collimator, first ultrasonic light modulator, input lens, slit screen, shaping lens, second ultrasonic light modulator, output lens, and photoamplification module. As a distinguishing feature of the patent, the frequency band of signals which can be handled is extended, and the operating efficiency of the device is improved by adding a dispersion quadripole with linear dispersion characteristic and a pulse generator with linear frequency modulation. The inputs of the quadripole and pulse generator are connected to the input of the device, and the output of the dispersion quadripole is connected through the corresponding amplifier to the input of the second ultrasonic light modulator,

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KULAKOV, S. V. et al., USSR Author's Certificate No 374633

while the output of the pulse generator is connected through the series connected delay circuit and other amplifier to the input of the first ultrasonic light modulator.

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USSR

UDC 612.58+612.822.3

TIGLIYEVA, S. N., Leningrad Institute for Advanced Training of Physicians
Imeni S. M. Kirov

"Changes in Brain Electrical Activity and in Some Parameters of Thermoregulation During Systemic Cooling of Nonanesthetized Cats"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 4, 1973, pp 565-570

Abstract: Bioelectrical activity was studied in different parts of the brain in nonanesthetized cats exposed to cold air (-16 and -20°) for 2 hours and the EEG picture was compared with the main stages of change in thermoregulation. During the first 5 min of cooling the temperature in the rectum, cerebral cortex, and deeper layers was normal, but bioelectrical activity was briefly depressed in all the leads. From min 5 to 60 the temperature dropped quickly in the rectum and brain by 0.3 to 0.5° and oxygen consumption rose. Meanwhile the background bioelectrical activity changed and a low-amplitude beta rhythm became dominant. The second hour was marked by a 2.3 to 3.7° drop in rectal and brain temperature, increased and stable oxygen consumption and muscle bioelectrical activity; synchronized large-amplitude waves were periodically recorded in the EEG's of all the animals. Conditioned reflexes were impaired (disinhibition of differentiations) from the start of exposure to low

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USSR

TIGIYEVA, S. N., Fiziologicheskiy Zhurnal SSSR, No 4, 1973, pp 565-570

temperature. Throughout the experiment the changes in bioelectrical activity were most pronounced in the posterior hypothalamus.

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USSR

UDC: 621.317.373

GERUNI, P. M., TIGRANYAN, R. M.

"A Precision Phase Meter for the SHF Range"

Dokl. Nauchno-tekhn. seminar "Metrol. v radioelektron." Tezisy, Ch. 1 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 1), Moscow, 1970, p 57 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A200)

Translation: The authors consider a precision SHF phase meter designed for measuring the phase shift between rf signals in the decimeter, centimeter and millimeter wavelength ranges. Its principal advantages are high precision, wide band and automatic operation. Data are given from experimental studies of instruments in the millimeter and decimeter wavelength ranges. Resumé.

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