

USSR

PLATONOV, V. P., and YANCHEVSKIY, V. I., Doklady Akademii Nauk SSSR, Vol 208, No 3, 1973, pp 541-544

the statement: the commutant $GL(1,D)$ coincides with $SL(1,D)$. For $SU(\phi)$ everything is also reduced to a certain hypothesis on the structure of a body D with involution.

At the present time the hypothesis for $SL(n,D)$ has been proved for p -adic fields and algebraic number fields, the hypothesis for $SU(\phi)$ only for p -adic fields. The purpose of the article is to prove the hypothesis for any global fields. The fundamental theorem is: Over global field K the group $SU(\phi) = TU(\phi)$ i.e., is generated by transvections and is the commutant of the group $U(\phi)$. The proof of this theorem essentially depends on proving the hypothesis for $SL(n,D)$. In particular, the hypothesis for $SL(n,D)$ must be proved for a functional global field. This is done by a slight modification of WANG's reasoning, using the theory of class fields for functional fields.

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USSR

KARTASHEV, K. B., PISTUNOVICH, V. I., ~~PLATONOV, V. V.~~, RYUTOV, V. D.,
FILIMONOVA, YE. A.

"Detection of Fast Electrons in Plasmoid Injection into a Transverse Magnetic Field"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 15,
No. 1, 5 Jan 72, pp 7-9

Abstract: Fast electrons observed in the injection of a plasmoid into a transverse magnetic field are described. The experiments were conducted on the INYeS device described by Golovin, et al, at the IV International Conference on Plasma Physics and Thermonuclear Research at Madison in June 1971. It is noted that when a plasmoid enters a transverse magnetic field, there should occur a redistribution of energy between the ion and electron components, as has been discussed theoretically by many authors using a one-dimensional model of an equilibrium boundary layer between the plasma and the magnetic field. In this model the plasma flow incident on the magnetic field is reflected as a whole from the "magnetic wall" and acceleration of electrons and slowing down of ions occurs in the transition layer formed due to separation of the

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KARTASHEV, K. B., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 15, No. 1, 5 Jan 72, pp 7-9

charges. Upon injection of the plasmoid into the magnetic field there was recorded x-radiation with an energy of the order of the energy of the incident protons. The radiation was recorded by a scintillation detector from the central region of the trap. Oscillograms of the x-radiation are shown for different magnetic field strengths. The intensity of the radiation increased with an increase in the field strength from 1 to 2.5 koe. In the absence of a magnetic field the radiation was never observed. A first narrow radiation peak on the time scale corresponds to the time of input of the plasmoid into the magnetic field. A second, wider peak arises simultaneously with the beginning of radiation of the spectral line of copper CuI,-- i.e., at the time of entry of the plasmoid into the trap from the plasma gun -- for a plasmoid moving with a velocity of $3 \cdot 10^6$ cm/sec and containing a large number of impurities. Electromagnetic radiation in the range 4.6-0.8 cm was recorded simultaneously with the x-radiation; as in the case of radiation, it was never observed in the absence of a transverse magnetic field, and its intensity increased with an increase in the field strength. The intensive radiation in the range of characteristic plasma frequencies and their harmonics indicates

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KARTASHEV, K. B., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 15, No 1, 5 Jan 72, pp 7-9

the existence of a plasma with a high level of oscillations in the trap. A second pulse of x-radiation indicates the presence of high-energy electrons held in the trap. The study indicates that a considerable number of electrons acquire energy and are captured in the trap upon the entry of a fast plas-moid into a transverse magnetic field. The authors conclude that it remains unclear as to what serves as the target for the slowing down of fast electrons responsible for the appearance of the first x-radiation peak and that the experimental results cannot be fully explained within the framework of the aforementioned one-dimensional model.

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USSR

PLATONOV, V. V., TRET'YAKOV, N. Ye., FILIMONOV, V. N.

"Infrared Spectra of the OH Groups on the Surfaces of Oxides"

Uspekhi Fotoniki [The Successes of Photonics -- Collection of Works], No 2, Leningrad University Press, 1971, pp 92-129 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1505 by S. Grigorovich).

Translation: This review is dedicated to the IR spectra of the OH groups on the surfaces of the oxides of Be, Mg, Ca, Zn, Y, Al, Ga, In, Ti, Zr, Hf, Th, Si, Ge, Ta and Ni. Primary attention is given to the following problems: 1) detection and clarification of the specifics of the structure of the hydroxyl cover on the oxides; 2) conditions of removal of water adsorbed in molecular form from the surface and conditions of dehydroxylation of the surface; 3) interaction of OH groups with physically adsorbed molecules.
85 Biblio. Refs.

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- 10 -

USSR

BURTOV, A. I., GRUSHVITSKIY, R. I., METTER, E. Ya., PETROV, V. A., PLATONOV, V. V., SAVUTKIN, V. V., VEDESHEKOV, V. A., VOLKOV, A. F., ZENKIN, V. D., LIKHONINSKIY, V. S., and SOROKIN, G. K.

"Computer Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1972, p 162, No (11) 351216

Translation: This patent describes a computing device containing resolving modules with decoupling cells at the power supply inputs. It also has a control block connected to the inputs of a switching block and an efficiency indicator. Every output of the switching block is connected to the control input of one of the decoupling cells, thus improving the reliability of the device.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LIFE OF A QUARTZITE CRUCIBLE FOR A 12 METRIC TON INDUCTION FURNACE
-U-

AUTHOR--(CS)--KAYBICHEVA, M.N., PLATONOV, B.P., PLATONOV, YU.B., BERKOVSKIY,
I.M., REPATOVSKIY, M.I.
COUNTRY OF INFO--USSR

SOURCE--LITEINCE PROIZVOD. 1970, (4), 33-6

DATE PUBLISHED-----7C

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

TOPIC TAGS--INDUCTION FURNACE, QUARTZ, THERMAL STABILITY, MAGNESIUM OXIDE,
CALCIUM OXIDE, IRON OXIDE, ALUMINUM OXIDE, SILICON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1932

STEP NO--UK/0128/70/000/004/0033/0036

CIRC ACCESSION NO--AP0132194

UNCLASSIFIED

2/2 G22

UNCLASSIFIED

PROCESSING DATE--20NOV76

CIRC ACCESSION NO--AP0132194

ABSTRACT/EXTRACT--(U) GP-9- ABSTRACT. TWO QUARTZITES FOR MAKING INDUCTION FURNACE CRUCIBLES WERE COMPARED AS TO THEIR ENDURANCE, FRIABILITY, AND HEAT RESISTANCE: DOMESTIC AND SWEDISH, WHOSE COMPNs. WERE SIO SUB2 98.10, 97.34, AL SUB2 O SUB3 0.59, 0.95, FE SUB2 O SUB3 0.31, 0.26, CAD 0.79, 0.26, AGO MINUS, 0.03, AND M SUB2 O (METAL OXIDES) MINUS, 0.24, LOSS ON IGNITION 0.10, 0.46 WT. PERCENT, RESP. THE CRUCIBLES MADE FROM THE DOMESTIC QUARTZITE WERE MORE FRIABLE AFTER HEATING FOR 2 HR AT 1450DEGREES THAN THE SWEDISH CRUCIBLES, (PROBABLY BECAUSE THE DOMESTIC QUARTZITE HAD MORE SIO SUB2), AND THE D. WAS 2.530 AND 2.360 G-CM PRIME3, RESP. THE ADDN. OF 1.0-2.0PERCENT OF B SUB2 O SUB3 DECREASED THE D. TO 2.459, AND 2.330 G-CM PRIME3, RESP. THE CRUCIBLES WITHSTOOD 321 AND 309 MELTINGS, RESP.

UNCLASSIFIED

USSR

NIKOLAYEV, A. I., and PLATONOVA, L. Ye.

Metody Opredeleeniya Autoantitel i ikh Sravnitel'naya Otsenka (Methods of Determining Autoantibodies and Their Comparative Evaluation), Tashkent, "Meditsina," 1971, 112 pp

Translation: Annotation: Successful development of research to study the role of autoimmune processes in the pathogenesis of diseases is linked first of all to developing simple, sensitive methods of detecting autoantibodies. A large number of reactions are suggested, many of which are cumbersome labor-consuming, and abound in errors, while some of them are not sufficiently sensitive. Antigens prepared by various methods are employed to detect autoantibodies. The frequency of detection of autoantibodies during the same illness differs according to different authors. For this reason it became necessary to generalize, systematize, and make a comparative evaluation of the methods, descriptions of which are scattered in numerous periodicals.

Modern methods of detecting autoantibodies are presented in the monograph and a comparative evaluation of the methods is given.

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USSR

NIKOLAYEV, A. I., and PLATONOVA, L. Ye., *Metody Opredeleniya Autoantitel i ikh Sravnitel'naya Otsenka (Methods of Determining Autoantibodies and Their Comparative Evaluation)*, Tashkent, "Meditsina," 1971, 112 pp

The book is intended for a broad range of scientific workers and doctors of various specializations.

Table of Contents:

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| Introduction | 3 |
| Autoantibodies and the Mechanism of Their Formation | 5 |
| Methods of Detecting Autoantibodies | 11 |
| Comparative Evaluation of Methods for Detecting Circulating Autoantibodies | 95 |
| Some Methods of Obtaining Antigens From Organs and Tissues for Serological Reactions | 105 |

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USSR

PLATONOVA, S. G.

"Thermodynamics of Ejection Processes"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodiln. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 129-137 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11B516)

Translation: This article contains a general thermodynamic analysis of the mixing process in an ejector. It is demonstrated that the ordinary structural design of ejection equipment with an active nozzle at a significant distance from the mixing chamber is not always expedient. A procedure is proposed for calculating low-head ejectors based on use of hydraulic methods. In order to check the proposed calculation procedure, a series of experimental models of an ejector with cylindrical and diffusion mixing chambers was tested. On the basis of the experimental study, an industrial ejection pump was built for supplementing the flue gases when drying fuel with a high moisture content. The calculated study and experiments performed on a model of the equipment demonstrated the expediency

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USSR

PLATONOVA, S. G., Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodiln. prom-sti, 1970, pp 129-137

of using a scheme for the ejector with an exit cone mixing chamber for the case where $R_2 T_2 > R_1 T_1$; here R is the gas constant, T is the temperature, and the subscripts 1 and 2 refer to the active and passive flows, respectively. Industrial tests of the equipment confirmed the correctness of the selected calculation procedure. The bibliography has 6 entries.

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USSR

UDC 617.761-009.24-02:616.282.3

KURASHVILI, A. Ye., BABIYAK, V. I., VERICH, G. F., and PLATONOVA, T. G.,
Academy of Military Medicine imeni S. M. Kirov, Leningrad

"Parametric Description of Vestibular Nystagmus"

Moscow, Vestnik Otorinolaringologii, No 3, 1973, pp 31-35

Abstract: Based on a mathematical analysis of nystagmograms obtained from 50 subjects, the authors constructed empirical and theoretical curves showing the dynamics of the primary parameters of the nystagmic cycle. Using the methods of differential equations theory, they found the secondary parameters that determine the general patterns of nystagmus as a "stimulus -- reaction" process. Determination of the secondary parameters of vestibular nystagmus is of value in tracing the dynamics of the nystagmic reaction in relation to vestibular function and in diagnosing vestibular disorders. Nystagmus can also be modeled on a computer. By introducing perturbations into the secondary parameters, one can obtain nystagmic reactions with preassigned properties, i.e., artificially create pathological situations and subject them to structural analysis.

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1/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--USE OF GLASS FIBER REINFORCED PLASTICS IN AIRCRAFT FOR CROP DUSTING

-U-

AUTHOR--(05)-SAKALLY, M.TS., GOLUBEVA, L.I., BALASHOV, A.YA., PLATONOVA,
V.N. TELNOV, N.T.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 58-9

DATE PUBLISHED-----70

1 P

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES, AERONAUTICS,
AGRICULTURE

TOPIC TAGS--CROP DUSTING, AIRCRAFT MATERIAL, GLASS FIBER, REINFORCED
PLASTIC, POLYETHYLENE, PHOSPHATE, CHEMICAL STABILITY, CONTAINER/(U)VP57
GLASS REINFORCED PLASTIC, (U)11ED 5M GLASS REINFORCED PLASTIC, (U)PN1
GLASS REINFORCED PLASTIC, (U)EF32 0301 REINFORCED PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0663

STEP NO--UR/0191/70/000/002/0058/0059

CIRC ACCESSION NO--AP0119571

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP011957I
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION RESISTANCE OF LOW D.
POLYETHYLENE (I) AND OF SEVERAL GLASS FIBER REINFORCED PLASTICS, E.G.,
VPS-7, 11-ED SM, EF 32-0301, AND PN-1 WAS STUDIED TO DEVELOP A SUITABLE
CONTAINER FOR BORDEAUX MIXT. AND SUPERPHOSPHATES (USED FOR CROP DUSTING
AND SPRAYING). A VPS-7 CONTAINER (PRESSURE COATED WITH I) HAD SUPERIOR
WEAR RESISTANCE AND CHEM. STABILITY. CONNECTING METAL TUBES AND
SPRAYING HOSES WERE ALSO REPLACED BY VPS-7 REINFORCED I TUBES.

UNCLASSIFIED

USSR

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UDC 678.06-419.8:677.5217.004.14:
631.37:656.7

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SAKALLY, M. TS., GOLUBEVA, I. I., BALASHOV, A. YA., PLATONOVA,
V. N., TEL'NOV, N. T.

"Utilization of Fiberglass Plastics for Agricultural Aviation
Apparatus"

Moscow, Plasticheskiye Massy, Vol 2, 1970, pp 58-59

Abstract: Because of the fact that metallic units used in air spraying of agricultural fertilizers or toxic agents are corrosive, an attempt was made to find more resistant materials. The authors experimented with fiberglass VPS-7, 11-EDSM, EF 32-301, PN-1 materials and with low density polyethylene. As a result of their work, materials were made from fiberglass VPS-7 to assure strength, and plated with low density polyethylene films to give the desired chemical resistance. In this manner reservoirs for chemical agents and the dispersing arms could be manufactured.

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1/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MECHANISMS OF RADIATION DIFFUSION IN METAL -U-
AUTHOR--BYSTROV, L.N., IVANOV, L.I., PLATOV, YU.M.
COUNTRY OF INFO--USSR P
SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (1) 14-22
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL DISLOCATION, METAL DIFFUSION, CRYSTAL LATTICE VACANCY,
IRRADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0632 STEP NO--UR/0472/70/000/001/0014/0022
CIRC ACCESSION NO--AP0105611

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BASIS IS FOUND TO BE INADEQUATE FOR THE EXISTING STEADY STATE MODELS OF RADIATION ENHANCED DIFFUSION IN METALS GOVERNED BY THE MIGRATION OF RADIATION PRODUCED VACANCIES. THE DIFFUSION MECHANISM IS ANALYZED IN TERMS OF A PARTICIPATION OF INTERSTITIAL ATOMS IN THE DIFFUSION PROCESS. IN THE TEMP. RANGE IN WHICH MOBILE INTERSTITIAL ATOMS AND AS YET IMMOBILE VACANCIES OCCUR, THE RADIATION DIFFUSION PROCESS MUST BE UNSTEADY STATE. AT A CONST. RATE OF FORMATION OF RADIATION DEFECTS, THE COEFF. OF RADIATION DIFFUSION WILL DECREASE MONOTONICALLY OWING TO AN ACCUMULATION OF VACANCIES (SINKS FOR INTERSTITIAL ATOMS). THIS EFFECT MUST BE INTRINSIC IN SAMPLES CONTG. A SIGNIFICANT CONC. OF CONSTANTLY ACTING SINKS (DISLOCATIONS) AS THE IMMOBILE VACANCIES ACCUMULATE OWING TO A PREFERENTIAL ANNIHILATION OF A PORTION OF MOBILE INTERSTITIAL ATOMS ON THE DISLOCATIONS RATHER THAN ON THE VACANCIES. AN EQUATION FOR THE COEFF. OF INTERSTITIAL RADIATION DIFFUSION IS INFERRED.

UNCLASSIFIED

Nuclear Science and Technology

USSR

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UDC 534.9.019.3

BYSTROV, L. N., IVANOV, L. I., PLATOV, YU. V., Moscow

"Radiation Diffusion Mechanisms in Metals"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb
70, pp 14-22

Abstract: The authors review existing theories of the radiation amplification of diffusion in metals, on the thesis that currently used models of stationary radiation diffusion as governed by movement of radiation vacancies are not justified. It is demonstrated that in the temperature range where interstitial atoms are mobile and vacancies immobile, the process of radiation diffusion is necessarily nonstationary. Given a constant rate of introduction of radiation defects, the radiation diffusion coefficient will diminish monotonically from the accumulation of vacancies, and in samples where there is a fairly high concentration of constantly active dislocations

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USSR

BYSTROV, L. N., IVANOV, L. I., Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 70, pp 14-22

this effect will be quite marked. On this basis, an equation for the coefficient of nonstationary interstitial radiation diffusion is derived.

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USSR

AMBARTSUMYAN, R. V., LETOKHOV, V. S., MAKAROV, G. N., PLATOVA, A. G.,
PURETSKIY, A. A., and TUMANOV, O. A.

"Investigating the Excitation of Oscillatory Levels in $N^{14}H_3$ by Radiation
of a CO_2 Laser"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 3, 1973, pp
771-784

Abstract: The difficulty in the way of developing a precise explanation of the processes leading to the dissociation and chemical reactions of molecules excited by infrared radiation is the result of the paucity of effective methods for investigating the oscillatory state. In this paper, a direct method is developed for studying the population of oscillatory molecule levels from the intensity of the absorption lines in molecular transitions from the oscillatory state to the excited electronic state. Experiments for studying the population change of oscillatory levels in the NH_3 molecule under the excitation of a CO_2 laser are described, and a diagram of the experimental apparatus is given together with an explanation of its operation. The electron-oscillatory transmission spectrum of ammonia in the 2000-2250 Å range with and without the laser is produced. The theory of the phenomenon is developed and its results compared with the experimental results.

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USSR

UDC 539.374

BERNSHTEYN, M. L., LYUTSAU, V. G., PLATOVA, S. N., LYUTSAU, A. V., and
RUDNITSKIY, YE. N., Moscow Institute of Steel and Alloys

"Mechanism of Hardening of Steel as a Result of High-Temperature Thermo-
mechanical Treatment"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973,
pp 394-399

Abstract: The austenite substructure formed upon hot deformation under conditions of high-temperature **thermomechanical** treatment, defining the change in the composition of the martensite, is quite stable and is retained for a long period of time after completion of deformation and after secondary heat treatment. Achievement of the optimal combination of mechanical properties as a result of high-temperature **Thermomechanical** treatment requires that the substructure-formation process develop in such a way that most of the initial high-angle boundaries disappear; so that the entire volume of the metal is filled with subgrains which grow with time. There is a stage of the process (a duration of holding after deformation) such that as the new recrystallized structure is formed by coalescence of subgrains, the old high-angle boundaries disappear completely, while no new high-angle boundaries are yet formed.

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1/3 031 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--NEW HEAT RESISTANT SPRING ALLOY 17NKHBMU -U-
AUTHOR--BELOV, B.G., PLATOVA, S.N., BARSEGYAN, L.V.
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 25-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HEAT RESISTANT ALLOY, SPRING STEEL, LOW ALLOY STEEL,
ELASTICITY, NICKEL STEEL, CHROMIUM STEEL, NIOBIUM STEEL, ALUMINUM STEEL,
INTERMETALLIC COMPOUND/(U)ELASTOMAT METAL TEST EQUIPMENT, (U)17NKHBMU
LOW ALLOY SPRING STEEL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1299 STEP NO--UR/0129/70/000/002/0025/0028
CIRC ACCESSION NO--AP0106078
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOY CONTG. C SMALLER THAN OR EQUAL TO 0.06, CR 14-16, NB 9.5-10.5, MO 4-6, AL 1.0-1.5PERCENT AND NI WAS MELTED IN AN INDUCTION FURNACE, THE INGOTS WERE FORGED AT 1050-1170DEGREES AND THE SHEET BARS OBTAINED WERE HOT AND COLD ROLLED. THE 0.3 MM THICK MICROSPECIMENS AND THE 0.6 MM THICK, FLAT TEST PIECES WERE TENSION TESTED BY USING THE "AMSLER" MACHINE AT ROOM TEMP., AND UP TO 600DEGREES, RESP. THE ELASTIC LIMIT SIGMA SUB0.2, AND SIGMA SUB0.005 AND THE STRESS RELAXATION WERE DETG. BY THE BEND TESTS OF THE 0.3 TIMES 5-TIMES 100 MM SPECIMENS AT 500-600DEGREES; THE MODULUS OF ELASTICITY E WAS MEASURED BY THE RESONANCE FREQUENCY METHOD WITH THE "ELASTOMAT" APP. AND CYLINDRICAL 8 MM DIAM. SPECIMENS. THE COLD DEFORMED SPECIMENS, THOSE QUENCHED FROM 1100, 1150, AND 1200DEGREES, AND THOSE TEMPERED AT 750DEGREES FOR 5 HR AFTER QUENCHING FROM 1100-500DEGREES, WERE TESTED. THE ALLOY SHOWS HIGH RELAXATION STABILITY AT 500 AND 550DEGREES. THE STRESS DURING 50 HR TESTING DECREASES BY 8 AND 15PERCENT, RESP. INCREASE OF THE TEMP. UP TO 600DEGREES CAUSES THE 30PERCENT STRESS RELAXATION DURING 50 HR. THE CYCLIC STRESS TESTS SHOWED THAT NO. OF CYCLES TO FRACTURE AT 70-80 KG-MM PRIME2 WAS (3.8-4.7) TIMES 10 PRIME5. THE METALLOGRAPHIC EXAMNS. REVEALED THAT THE STRUCTURE OF THE ALLOY QUENCHED FROM 1150DEGREES CONSISTS OF THE GAMMA SOLID SOLN. GRAINS WITH A SMALL AMT. OF A 2ND PHASE. THE PHASE ANAL. REVEALED THE PRESENCE OF NI SUB3 NB, M SUB6 C, AND NB(CN) PHASES, WHERE M IS A METAL.

UNCLASSIFIED

3/3 031

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106078

ABSTRACT/EXTRACT--THE TEMPERING AT 750DEGREES FOR 10-25 HR CAUSES DECOMP. OF THE SUPERSATD. SOLID SOLN. ASSISTED BY THE PPTN. OF FINE DISPERSED FCC. (NI, CR) SUB3 (NB, MO, AL) PHASE OF THE NI SUB3 NB TYPE. J. PIETKIEWICZ.

UNCLASSIFIED

USSR

BRODER, D. L., PLATOVSKIKH, Yu. A., POPKOV, K. K., SERGEYEV, I. V.

"Use of Jacobi Polynomials to Describe Propagation of Gamma Radiation"

Minsk, Vestsi Akademii Navuk BSSR: Seryya Fizika-Energetychnykh Navuk,
No 1, 1973, pp 13-18

Abstract: It is shown to be possible to obtain an approximating kinetic equation in cylindrical geometry by Jacobi polynomial expansion of the angular relation containing two arbitrary parameters. The distribution function and scattering kernel are expanded by polynomials having different parameter values. A multigroup system of equations is obtained. By using Jacobi polynomials for the approximate solution of the kinetic equation written in a modified coordinate system it is possible to describe satisfactorily the space-energy relation of the radiation flux even in the first approximation.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--AUTOMATIC CONTROL OF THE PREPARATION OF A CATALYST FOR PRODUCING
SYNTHETIC FATTY ACIDS -U-
AUTHOR--(04)--BESITSKIY, R.M., MASLOVA, N.M., RUSINOV, I.YE., PLATUKHIN,
V.M.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 38-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AUTOMATIC CHEMICAL PROCESS CONTROL, MANGANESE, CATALYST,
HYDROGEN ION CONCENTRATION, FATTY ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0437 STEP NO--UR/0138/70/000/002/0038/0040
CIRC ACCESSION NO--AP0119373
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTOMATION IS BASED ON PH CONTROL IN THE REACTION MIXT. FOR PREPG. THE MN CATALYST. A PH METER WITH GLASS ELECTRODE IS USED TO CONTROL A CONC. OF 0.1-0.5PERCENT MADH IN THE MIXT., THE ABS. ERROR BEING 0.05PERCENT. EXPTL. RESULTS ARE PRESENTED. FACILITY: SHEBEKIN. KHIMKOMB., SHEBEKINO, USSR.

UNCLASSIFIED

USSR

UDC 536.2

MUSTAFAYEV, R. A., PLATONOV, Ye. S., Leningrad Institute of Precision Mechanics and Optics

"Nonstationary Method for Measuring Heat Conductivity of Liquids and Gases at High Pressures"

Moscow, Teplofizika vysokikh temperatur, No. 3, May/Jun 72, pp 615-621

Abstract: Nonstationary methods of linear and nonotonic heating as methods for measuring the heat conductivity of liquids and gases are discussed since they can determine the temperature dependence of the heat conductivity over a wide temperature range from a single experiment within a relatively short time period. Simple versions of the λ -calorimeter for monotonic heating of liquids proposed by O. A. Krayev in 1960 are examined in particular. An examination of the theoretical basis of the method shows that it is based on the nonlinear theory of heat conductivity and that it is useful for measurements in zones of a sharp change in the thermophysical parameters. A diagram of the proposed λ -calorimeter is shown. The device consists of a hollow metal block and a continuous copper core installed coaxially. The annular gap between them has a constant thickness h and is filled with the substance being tested. A uniformly distributed electric

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USSR

MUSTAFAYEV, R. A., PLATUNOV, Ye. S., *Teplofizika vysokikh temperatur*,
No. 3, May/June 72, pp 615-621

heater is on the surface of the block. An efficient light-weight insulation is used to protect the calorimeter from the medium. Relationships are obtained for developing the optimal structure of the calorimeter unit. The method was checked experimentally in the temperature range 20-400°C at pressures of up to 500 bar. Air, water, water vapor, n-heptane, and n-decane were used as samples. Deviations from tabular curves were no more than 2% over the entire range of working temperatures and pressures. The experiments supported the suitability of the method for studies in zones of a sharp change in the thermophysical parameters of the substance, including direct proximity to the liquid-vapor transition point.

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USSR

UDC: 536.24

BEGUNKOVA, A. F., PLATUNOV, Ye. S., Leningrad Institute of Precision Me-
chanics and Optics

"A Nonstationary Method of Determining Localized Heat Flows"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 15, No 3, 1972, pp
106-109

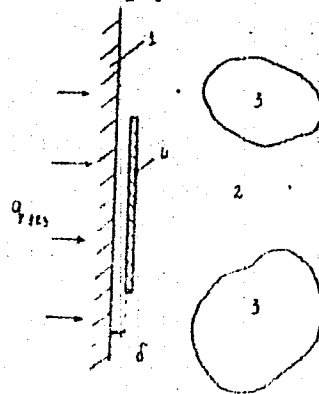
Abstract: A method of measuring localized heat fluxes is considered which combines simplicity, universality and speed. The method is illustrated by the accompanying figure. The section of the surface of the object to be studied is located in a convective-radiant (gas or liquid) medium and participates simultaneously in convective heat transfer with the medium which circulates directly over it (2) and in radiant heat exchange with external bodies (3) surrounding the object. The temperature field of the medium (2) and the bodies (3) is homogeneous in the general case, and therefore the resultant specific heat flux q_{res} on the surface of the object (1) being studied is a very complex function of many parameters. It is proposed that the heat flux q_{res} be measured by using a thin metal disc (4) with known

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USSR

BEGUNKOVA, A. F., PLATUNOV, Ye. S., Izv. VUZov, Priborostr., Vol 15, No 3, 1972, pp 106-109

specific heat C . The disc is placed parallel to the surface of the object with a gap δ between them. Formulas are given for determining the resultant heat flux and the coefficient of heat exchange between the surface of the object and a nonisothermal medium. Measurements show reasonable agreement with data in the literature. The proposed method can be used to separate the convective and radiant components of the heat flux if two discs are used. Two figures, bibliography of two titles.



2/2

USSR

UDC 536.63

ALESHKEVICH, Yu. V., GOL'DBERG, G. R., BURAVOY, S. Ye., PLATUNOV, Ye. S.

"Installation for Studying Heat Physical Properties of Materials in 50-900°C Temperature Interval"

Priborostroyeniye, No 12, 1971, pp 103-107.

ABSTRACT: An installation is described for studying the heat capacity and temperature conductivity of solids with a heat conductivity λ of 2 to 50 w/m·degree. Measurements are performed with smooth heating of a cylindrical specimen. The total measurement error is not over 5-10%. A photograph and schematic diagram of the device are presented. Errors in the measurement of temperature conductivity generally did not exceed 7%. The basic error components are: errors in determination of spacing R (2%), asymmetrical temperature field of the specimen, errors in graphic differentiation (up to 3%), errors in recording by the electronic potentiometer (1-2%) and others. The author's particularly note the errors developing in the measurement of θ resulting from the inertia of the R and 0 thermocouples. These errors can be reduced by placing the specimen over the thermocouples rather tightly, with a clearance not exceeding 0.03 mm.

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PLAVICH, L.F.

SRS 59208
6-73

3

XII-12. EPITAXIAL LAYERS OF GALLIUM PHOSPHIDE-ARSENIDE OBTAINED BY THE GAS TRANSPORT METHOD

Article by Ye. N. Vlasovitch, L. F. Plavich, V. M. Andreyev, Moscow; Korostilov, I. I. Sbornik na Preseban Rosta i Sinteza Poluprovodnikov i Katalizatorov I. Plesnek, Kuznec, 12-17 June 1972, p 176.

In connection with the broad application of solid solutions of gallium arsenide-phosphide to manufacture laserwatts for coherent and incoherent radiation, the study of the laws affecting the parameters of the epitaxial structures during the growth process has important significance. In this paper a study was made of the problem.

In this paper a study was made of the problem of the effect of super-saturation in the investigated systems (Ga_{1-x}P_x-HCl and As_{1-x}P_x-HCl of gallium) on the morphology, chemical composition and growth rate of the epitaxial layers.

Results are presented from a study of the structure and the electrophysical parameters of epitaxial layers (0 < x < 1).

The epitaxial layers of GaAs_{0.6}P_{0.4} of a conductivity allowed with tellurium up to 150 atoms thick had a dislocation density in the surface layer of 5·10⁸ cm⁻². Hall mobility of the electrons of 1,500-2,000 cm²/volt-sec with a concentration of the current carriers of 4·10¹⁷-5·10¹⁶ cm⁻³.

USSR

KRISTINKOV, D. S. Izvestiya Akademii Nauk Latvyskoy SSR, No 2, 1970 pp 90-96

sign, where n is the number of terms in the series. Once the coefficients of the series' terms have been determined from this condition, the approximating differential equation is found by substituting the series directly in the approximating equation, equating the coefficients for identical exponents. The errors introduced in the transition from the series to the approximating equation are reduced by changing the arbitrary constants, using a random search technique in the parameter space; i.e., varying each parameter in a randomly selected direction and retaining the change if the function to be minimized is reduced or abandoning it if the function is not reduced.

A block diagram of the algorithm is provided, showing three stages: 1) find the formula for the desired power series; 2) substitute the series in the corresponding differential equation, finding its coefficients by a method which these same authors have previously described in No 5 of this journal for 1969; 3) vary the arbitrary constants, seeking a minimum.

There are five references, all to Soviet works.

2/2

USSR

UDC: 621.317.7+681.142.621

PLAUDE, R. A., and CHAPENKO, V. P., Institute of Electronics and Computer Technology, Academy of Sciences, Latvian SSR

"Possibilities for the Logical Design of Digital Meters by the Method of Inertial Semi-Automatic Devices"

Riga, Izvestiya Akademii Nauk Latviskoy SSR, No 2, 1970, pp 97-102

Abstract: A formal procedure is described for the design of digital measuring devices. In contrast to the models of Mopre and Moore-Mill, the components are described as inertial semi-automatic devices, less sensitive to impulse noise than impulse-potential elements and less sensitive to the parameters of the signals measured, amplitude, duration, and steepness. The technique of formation of all bits in the output code is identical, except for the high- and low-order bits. The example used in an analog-to-digital converter made up of iterative structures.

The basic technique is to represent the control section (comparison section) of this apparatus as a finite automaton, first by state diagrams and then by an eight-state matrix, in which each row represents a state and the values of

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USSR

PLAUDE, R. A., and CHAPENKO, V. P., *Izvestiya Akademii Nauk Latviskoy SSR*, No 2, 1970, pp 97-102

the elements in this row represent the transitions from this state to other states. This state matrix is then reduced to a matrix containing no degenerate or competitive relationships between states, by a method attributed to Yakubaytis, Gobzemis, and Fritsnovich in No 5 of the journal *Avtomatika i Vychislitel'naya Tekhnika* for 1967. Further simplifications are achieved by the introduction of functional connections and the combination of intermediate states, by a technique also attributed to Yakubaytis and described in the same issue of the same journal.

The present article introduces a modification of this algorithm, since the difficulty of establishing iterative relationships among the various functional connections makes it difficult to use. The modified algorithm does not guarantee the absolute minimum number of intermediate variables; however, it produces iterative structures on the basis of determined rules. An example of this procedure is given for the analog-to-digital converter control circuit described. The steps are: 1) find the row corresponding to the initial state; 2) insert 1's in the indeterminate transitions and exclude the intermediate variable corresponding to this state as unitary; 3) find the intermediate states

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PLAUDE, R. A., and CHAPENKO, V. P., *Izvestiya Akademii Nauk Latviskoy SSR*,
No 2, 1970, pp 97-102

corresponding to each of the possible states of the output bits (in the example there are three bits and eight states); 4) find the inverse relationships expressing each bit in terms of some combination of states; 5) interchanging the columns, obtain a shorter code for the internal states, in which the first eight states are replaced by the low-order three-bit values.

As this process is repeated, internal states which appear only in combination are isolated and replaced by single states, until the number of such states has been reduced to a relative minimum. The result is a shorter code than the initial code. This is converted to hardware by replacing each bit in the code with a negative feed-back circuit; to ensure the inertial character of the circuits, filters are included in them.

The authors report that several instruments have been designed by this method and that the majority of them are comparable in complexity to available instruments and less sensitive to input noise. The fact that they are constructed

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USSR

PLAUDE, R. A., and CHAPENKO. V. P., Izvestiya Akademii Nauk Latviskoy SSR, No 2, 1970, pp 97-102

from iterative structures substantially reduces the development time, since only minor changes need to be made for the high- and low-order bits.

There are five references, all to Soviet sources.

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Thermomechanical Treatment

VSSR

UDC 539.4.014.2:539.56

BERNSHTEYN, M. L., ZHUK, N. P., and FLAVICH, L. A. Moscow

"The Effect of High-Temperature Thermomechanical Treatment on Hydrogen Embrittlement of Steels"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 54-58

Abstract: The tendency of steels D and 36G2S to hydrogen embrittlement after high-temperature thermomechanical treatment (HTMT) and control thermal treatment (by the same method, but without squeezing) was investigated. The HTMT of steels reduces their tendency to hydrogen embrittlement, if compared with the control thermal treatment. The main source of this reduction is the uniform distribution of dislocations in the volume of the metal (lower stress concentration), which, on the one hand, decreases the tendency of the steel to a brittle breakdown and, on the other hand, reduces the hydrogen absorption of steel. The possibility of a braking effect of the growth of martensitic plates, having a high dispersibility, is indicated. The latter factor decreases the distortion of near-boundary volumes which are the main locations of embrittlement. Four figures, one table, two bibliographic references.

1/1

173 029 UNCLASSIFIED PROCESSING DATE--16 OCT 70
 TITLE--ANALYSIS OF THE ELASTIC AND INELASTIC SCATTERING OF D-DEUTERON
 ON NUCLEI OF AVERAGE ATOMIC WEIGHT -U-
 AUTHOR--(O) I. ANDROPOV, A.YE., VASILYEV, S.I., ZARUBIN, P.P., ORLOV, B.N.,
 PLAVKO, A.V.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 400-8
 DATE PUBLISHED-----70
 SUBJECT AREAS--PHYSICS
 TOPIC TAGS--PROTON SCATTERING, ELASTIC SCATTERING, INELASTIC SCATTERING,
 WAVE MECHANICS, NUCLEAR MODEL, SPIN ORBIT COUPLING, NICKEL ISOTOPE,
 ANGULAR DISTRIBUTION, SCATTERING CROSS SECTION, COMPOUND NUCLEUS
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 ROXY REEL/FRAE--1938/0245 STEP NO--UR/0048/70/034/002/0400/0403
 IRC ACCESSION NO--AP0105320
 UNCLASSIFIED

273 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

IRC ACCESSION NO--AP0105320

ABSTRACT. THE SCATTER OF P WITH ENERGIES 3-20 MEV WAS STUDIED TO DET. LIMITS OF APPLICABILITY OF THE DISTORTED WAVE METHOD DURING THE P SCATTERING ON PRIMES⁵³ NEGATIVE⁶⁴ NI NUCLEI, TO ELUCIDATE EXPTL. RESULTS ACHIEVED BY THE 6-MEV SCATTERING ON PRIMES⁵⁹ CU, PRIMES⁵⁸ NEGATIVE⁶⁴ NI, PRIMES^{63,65} CU NUCLEI BASED UPON 2 DISTORTED WAVE THEORIES AND THE MAUSSER-FESCHBACH THEORY, NEGLECTING THE EFFECT OF INTERFERENCES BETWEEN DIRECT AND COMPO. SCATTERINGS. DURING THE APPLICATION OF THE OPTICAL MODEL AND THE DISTORTED WAVE MODEL, SPIN ORBITAL INTERACTIONS WERE NEGLECTED. WHEN CONSIDERING THE VOL. ABSORPTION ONLY, A MARKED DISAGREEMENT WAS FOUND BETWEEN EXPTL. AND THEORETICAL RESULTS IN DETG. THE ELASTIC SCATTERING CROSS SECTION. THE DESIRED RESULTS WERE ACHIEVED ONLY BY SELECTING SUITABLE PARAMETERS FOR THE OPTICAL MODEL. IN PRIMES^{58,60} NI NUCLEI, A STRONG DEPENDENCE WAS VERIFIED FOR THE ANGLE DISTRIBUTION OF SCATTERED P ON THEIR ENERGIES. THE DISTORTED WAVE MODEL ALSO PROPERLY DESCRIBES THE INELASTIC SCATTERING OF 6-MEV P ON PRIME⁶⁴ NI NUCLEI BY USING PARAMETERS OF THE OPTICAL POTENTIAL OBTAINED BY THE ANAL. OF THE ELASTIC SCATTERING. THE PRESENCE OF COMPO. PROCESSES WAS VERIFIED. THIS EFFECT MUST BE TAKEN INTO ACCOUNT BY VARYING PARAMETERS OF THE OPTICAL POTENTIAL. THE SHAPE OF THE ANGLE DISTRIBUTION FOR P WITH ENERGIES OF LARGER THAN 10 MEV REMAINS ESSENTIALLY UNCHANGED; HOWEVER, THE CROSS SECTIONS ARE STRONGLY INCREASED OWING TO WINGS OF A WIDE RESONANCE MAX. WHOSE FORMATION IS CONNECTED WITH AN ACTION OF THE COMPETITIVE P AND N CHANNELS DURING THE DECAY OF THE COMPO. NUCLEUS.

3/3 029

UNCLASSIFIED

PROCESSING DATE--1600170

IRC ACCESSION NO--AP0105320

ABSTRACT/EXTRACT--THE ANAL. OF THE INELASTIC SCATTERING BASED UPON THE HAUSER-FESCHBACK THEORY SHOWED THAT FOR ACHIEVING DESIRED SPECTROSCOPIC DATA ONE HAS TO INCREASE THE PRECISION OF MEASUREMENT OF THE DIFFERENTIAL CROSS SECTIONS.

UNCLASSIFIED

1/2 014
 UNCLASSIFIED
 PROCESSING DATE--16OCT70
 TITLE--ELASTIC AND INELASTIC SCATTERING OF PROTONS ON MAGNESIUM-24, AND
 MAGNESIUM-25, AND MAGNESIUM-26 -U-
 AUTHOR--(05)-ANTROPOV, A.YE., ZARUBIN, P.P., ORLOV, B.N., PLAVKO, A.V.,
 SOROKIN, A.I.
 COUNTRY OF INFO--USSR

SOURCE--NAUK, SSSR, SER. FIZ. 1970, 34(1), 106-15
 DATE PUBLISHED-----70

P

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
 TOPIC TAGS--ELASTIC SCATTERING, INELASTIC SCATTERING, PROTON SCATTERING,
 MAGNESIUM ISOTOPE, ANGULAR DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1988/0208

STEP NO--UR/0046/70/034/001/0106/0115

CIRC ACCESSION NO--AP0105284

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--APO105284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANGULAR DISTRIBUTIONS OF THE ELASTIC AND INELASTIC SCATTERING OF THE P ON PRIME24 HG, PRIME25 MG AND PRIME26 MG NUCLEI WERE MEASURED FOR THE ENERGIES 5.84, 5.94, AND 6.03 MEV. ALL AVAILABLE DATA ABOUT THE SCATTERING OF P ON THESE NUCLEI WERE CLASSIFIED AND SYSTEMIZED IN ORDER TO EXPLAIN THE CONTRIBUTION OF VARIOUS MECHANISMS IN THE PROCESS OF THE ELASTIC AND INELASTIC SCATTERING.

FACILITY: LENINGRAD. GOS. UNIV. LENINGRAD, USSR.

UNCLASSIFIED

1/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--ELASTIC AND INELASTIC SCATTERING OF PARTICLES AND THE MODEL OF AN
EXCITED CORE IN THE A EQUALS 25-35 RANGE -U-

AUTHOR--(05)-ANTROPOV, A.YE.; PLAYKO, A.V.; ZAPUBIN, P.P.; KUDRYASHOV,
V.I.; ORLOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 153-60

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELECTRON STRUCTURE, NUCLEAR MODEL, EXCITED NUCLEUS, ELASTIC
SCATTERING, INELASTIC SCATTERING, SODIUM ISOTOPE, MAGNESIUM ISOTOPE,
SULFUR ISOTOPE, CHLORINE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/0235

STEP NO--UR/0048/10/034/001/0153/0160

CIRC ACCESSION NO--AP0105311

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--15OCT70

CIRC ACCESSION NO--AP0105311

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE ANALYZED ON THE ELASTIC AND INELASTIC SCATTERING OF PARTICLES WITH EXCITATION OF LOWER LEVELS OF PRIME23 NA, PRIME24 MG, PRIME25 MG, PRIME26 MG, PRIME33 S, PRIME34 S, AND PRIME35 CL. ALSO, DATA OF MEASUREMENTS PERFORMED WITH SIMILAR TO 6 MEV P ARE INCLUDED. IT IS STUDIED TO WHAT EXTENT THE EXCITED CORE MODEL, THE MOST OFTEN USED MODEL, IS SUITABLE FOR THE DESCRIPTION OF THE NATURE OF LOW LEVELS OF ODD NUCLEI OCCURRING IN THE REGION OF A COMPLETE FILLING OF THE 1D-2S SHELL. AT THE CENTER OF THE SUBSHELL 1D SUBFIVEHALVES (PRIME23 NA, PRIME25 MG) WHERE THE DEFORMATION OF THE CORE OF ODD NUCLEI IS LARGE THE INTERRELATION OF N OR VACANCY WITH THE CORE IS NOT SO LARGE AS TO AFFECT THE CHARACTERISTIC FEATURES OF THE EXCITED CORE MODEL. IN ODD NUCLEI OCCURRING AT THE END OF THE SUBSHELL 1D SUBFIVEHALVES (PRIME27 AL) IN THE SUBSHELL 2S SUBONEHALF (PRIME29 SI, PRIME31 P), AND AT THE BEGINNING OF THE SUBSHELL 1D SUBTHREEHALVES (PRIME33 S, PRIME35 CL) THE INTERACTION OF THE PARTICLE OR VACANCY WITH THE CORE GOVERNS THE APPEARANCE OF THE CHARACTERISTIC FEATURES OF THE EXCITED CORE MODEL. IT OFFERS THE POSSIBILITY TO USE THE EXCITED CORE MODEL FOR THE INVESTIGATION OF THE STRUCTURE OF THE EXCITED STATES OF NUCLEI IN THIS REGION OF THE 1D-2S SHELL. FACILITY: Leningrad. Gos. Univ., Leningrad, USSR.

UNCLASSIFIED

USSR

UDC 518.5:681.3.06

GORBACHEVA, R. M., PLAVNIK, G. I., SHPIL'MAN, V. I.

"Use of Digital Computers to Analyze the History of Formation of Upthrusts (and Algorithm)"

Tr. Zap.-Sib. N-i. Geologo-razved. Neft. In-t [Works of Western Siberian Geological Prospecting Scientific Research Institute], No 36, 1970, pp 198-203, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V635 by the authors).

Translation: An algorithm is described and a block diagram is presented of a program allowing paleotectonic analysis to be performed by digital computer. The initial data used are the structural maps of the contemporary surfaces. Processing of these data by digital computer on the basis of the program presented allows the values of morphological parameters of paleographic upthrusts to be produced (marking of closed isohypses of paleographic upthrusts, number of complicating domes, area of upthrusts, its amplitude, etc.) and produces paleostructural maps.

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USSR

UDC 620.193.01:569.295

TOMASHOV, N. D., RUSKOL, YU. S., AYUYAN, G. A., IVANOV, YU. M., PLAVNEK, G. M., and NAZAROVA, R. I., Academy of Sciences USSR, Institute of Physical Chemistry 2

"The Effect of Alloying Elements on the Corrosion Behavior of Titanium"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 10-15

Abstract: The method of potentiostatic polarization curves, corrosion tests, and electron diffraction investigations were applied to investigate the corrosion and electrochemical properties of alloys based on titanium iodide with small additions of chromium, molybdenum, niobium, aluminum, manganese, and tin in a 40% H₂SO₄ solution at 80° under natural aeration, conditions.

The structure of the anodic oxide films developing on these alloys was analyzed. The passivation and full passivation potentials were found to be practically independent of the nature and concentration of the alloying addition, whereas the critical passivation currents and the currents in the passive zone varied significantly. Aluminum impairs the corrosion properties of titanium both in the active and passive states. Manganese and chromium increase the rate of corrosion in the active state and decrease it in the passive state. Niobium, on the other hand, reduces titanium corrosion rate in the active state and increases it in the passive state. One figure, three tables, thirteen bibliographic references.

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USSR

UDC 620.193.01

3

TOMASHOV, N. D., CHUKALOVSKAYA, T. V., CHERNOVA, G. P., ~~PLAVILK, G. M.~~
NAZAROVA, R. I., ZAKHAROV, A. P., and SHESHENINA, Z. V., Academy of Sciences
USSR, Institute of Physical Chemistry

"Structural Study of Surface Layer on Ti-Pd Alloys"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

Abstract: The article describes results of an electron microscopic, electron diffraction, and X-ray study of the surface layer forming on Ti-Pd alloy (Ti-0.2 percent Pd and Ti-1 percent Pd) during corrosion in 40 percent H₂SO₄ and 20 percent HCl at 100°. The electron microscopic study of the surface of Ti-Pd alloys after their corrosion confirms the supposition as to the accumulation of palladium on the surface in the form of very finely dispersed crystalline formations. After treatment of the surface with hot concentrated HNO₃, which dissolves Pd, the electron microphotographs show no particles. In the case of Ti-1 percent Pd palladium mainly forms very fine particles on the surface. The Pd accumulations on Ti-0.2 percent Pd alloy reveal a tendency towards the branched growth of primary crystallization centers.

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USSR

TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

The results of the electron diffraction study of the surface of Ti-1 percent Pd alloy show that after corrosion in 20 percent HCl at 100° there are strong lines characteristic of Pd and very weak lines characteristic of TiO₂ and TiH₂. After treatment of the alloy in HNO₃ the lines characteristic of Pd disappear, and only TiH₂ and TiO₂ are found on the surface. The relative intensity of the reflections characteristic of Pd increases with an increase in the corrosion time, while it decreases for TiH₂ and TiO₂. After corrosion in 40 percent H₂SO₄ at 100° reflections characteristic of Pd, TiH₂, and TiO₂ are observed. However, the intensity of the Pd-characteristic lines is considerably weaker than after corrosion in 20 percent HCl at 100°, and they are of a diffuse character, while the intensity of the reflections characteristic of TiH₂ and TiO₂ is stronger.

X-ray analysis of the powdered surface layer that forms on Ti-1 percent Pd alloy shows that after corrosion in 20 percent HCl at 100° the alloy

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USSR

TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

preferentially contains metallic palladium. After corrosion of the alloy in 40 percent H_2SO_4 at 100° , along with the strongest Pd lines, considerably weaker lines characteristic of Ti_2N are observed.

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USSR

UDC 669.018.8

TOMASHOV, N. D., RUSKOL, YU. S., IVANOV, YU. M., and PLAVNIK, G. H.,
Institute of Physical Chemistry, Academy of Sciences USSR

"The Effect of Phase Composition of Ti-15% Mo alloys on Its Corrosion Behavior
in the Active State"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 507-513

Abstract: The corrosion behavior of Ti alloys with 15.1% Mo with a β structure was studied. The alloy was prepared from titanium iodide with the addition of molybdenum, first subjecting it to crucibleless electron-radiation zone smelting. The smelting was carried out in an arc furnace with non-consumed tungsten electrodes in the holes of a water cooled copper tray in an atmosphere of spectrally pure helium. At the same time a control with titanium iodide was run in one of the holes. If the hardness of the titanium as a result of smelting was increased due to gas adsorption much more than 10 units on the Vickers scale, the melt was discarded. The 50 g ingots obtained were forged at 900° into rods and sheets. Finally, after removing the scale and surfaces defects, it was rolled into strips.

Thermal processing of the samples was carried out by heating evacuated and sealed ampules in a muffle furnace for 30 min. at 950°. They were then

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TOMASHOV, D. N., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 507-513

transferred to a water bath and fast mixing the ampule was broken. The samples prepared in this fashion had a Vickers hardness H_v of 10/30 - 190.

Before the electrochemical studies, the samples were cleaned with sandpaper, degreased with acetone, washed with distilled water, and dried in a dessicator for not more than 1 day over CaCl_2 . The tests were carried out with natural aeration in 40% sulfuric acid solutions at different temperatures.

Since samples with a β and $\beta + \omega$ structure with a spontaneous natural air oxide film are not activated at temperatures below 80° , and with a $\beta + \alpha$ structure below 70° , a preliminary activation (1 min. in the same acid) of the alloys with a β and $\beta + \omega$ structure at 90° and with a $\beta + \alpha$ structure at 75° was carried out. Without activation the melt remained in the passive state, having a positive stationary potential (e.g., 0.1 v at 80° for alloys β and $\beta + \omega$) and a lower velocity of corrosion ($10.09 \text{ g/m}^2 \cdot \text{hr}$). After activation the alloy was steadily dissolved in an active state with significant velocity.

A significant effect is shown by the phase composition of Ti - 15% Mo alloy on its corrosion in the activated condition. A much higher corrosion resistance is observed with the single phase β alloy, the least with the two phase $\beta + \alpha$ alloy. This was determined by the much higher resistance

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TOMASHOV, N. D., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 507-513

of the β -phase containing, in comparison to the α and ω phases, a higher Mo content. Thus, for maximum increase in the resistance of titanium alloys, alloys with a β -stabilizer (e.g., Mo, Nb, V) it follows that it is possible to apply a thermal processing which will promote the conservation of a single phase β state.

It was also shown that a significant deterioration in the corrosion properties of Ti-Mo alloy occurred in the presence of the metastable ω -phase. In the diffusion of two phase $\beta + \alpha$ and $\beta + \omega$ alloys in the activated state in the region of a potential of 0.260-0.140 v, a concentrated Mo phase accumulates on the surface.

3/3

USSR

UDC 620.193.52

BYALOBZHESKIY, A. V., PLAVNIK, G. M., ANUROVA, G. M., and
FEDOROVA, G. M., Academy of Sciences USSR, Institute of Physical
Chemistry

"Composition of Films Formed on Metals in Distilled Water at 250°"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 177-178.

Abstract: The authors performed x-ray phase analysis of the films formed on copper, cadmium, tungsten, molybdenum, niobium, zirconium, titanium, nickel, and iron in distilled water at 250°. The films formed on each of these types of metals are described.

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USSR

UDC: 669.018.8

TOMASHOV, N. D., RUSKOL, Yu. S., FILIPPOV, A. F., BELYANKINOV, L. M.,
PLAVNIK, G. M., and FEDOROVA, G. M., Institute of Physical Chemistry,
Academy of Sciences USSR

"Corrosion Behavior of Titanium-Molybdenum-Chromium Alloys"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 499-504

Abstract: This paper deals with the effect of chromium on the corrosion resistance of titanium alloys containing 5 and 10% molybdenum. The electrochemical and corrosion behavior of the alloys was studied by potentiometry, both the current and weight losses being the indicators of the corrosion rate. It has been shown that the β -phase of titanium alloys containing a stable (under the testing conditions) component such as molybdenum, possesses elevated corrosion resistance. In the active dissolution of two-phase $\alpha+\beta$ -alloys of titanium with molybdenum, predominantly the α -phase goes into solution, while the β -phase remains at the surface in the form of a finely disperse layer. In the active

1/2

USSR

TOMASHOV, N. D., et al, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70,
pp 499-504

dissolution in nonoxidizing media, the corrosion rate of Ti-Mo-Cr alloys markedly decreases only on addition of chromium in an amount sufficient for producing single-phase β -alloys (Ti-5Mo-10Cr and Ti-10Mo-10Cr); however, if the alloys have an $\alpha+\beta$ -structure, then the corrosion rate remains about the same (as compared to Ti-Mo alloys). Chromium addition reduces the tendency of alloys to over-passivation, which is caused by the presence of Mo, and the Ti-5Mo-10Cr alloy exhibits the same low corrosion rate within 0.15 to 1.2 v as titanium or Ti-10Cr alloy. At potentials which are more positive than 1.2 v, the corrosion rate of Ti-Mo-Cr alloys begins to increase owing to the tendency of chromium to over-passivation.

2/2

1/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--APPLICATION OF THE X RAY SMALL ANGLE SCATTERING METHOD TO THE
STRUCTURE STUDY OF MONOMINERAL BINDING MATERIALS -U-

AUTHOR--(03)-SHUROV, A.F., SOROCHKIN, M.A., PLAVNIK, G.M.

P

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 454-457

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--X RAY STUDY, GYPSUM, PARTICLE SIZE, BONDING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2140

STEP NO--UR/0069/70/032/003/0454/0457

CIRC ACCESSION NO--AP0125723

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE X RAY SMALL ANGLE SCATTERING (SAS) ON THE WATER-GYPSUM RATIO IN HARDENED GYPSUM HAS BEEN STUDIED AS WELL AS THE CHANGE OF SAS DURING HARDENING. THE OBSERVED SAS PATTERNS ARE DETERMINED BY THE TRUE SMALL ANGLE SCATTERING, RATHER THAN BY DIFFRACTION REFLECTION. THE VARIATION OF SAS INTENSITY DURING HARDENING IS ASSOCIATED WITH THE CHANGED PARTICLE SIZE IN THE HARDENING PASTE. FACILITY: INZHENERNO-STROITEL'NIY INSTITUTE, GRO'KIY. FACILITY: INSTITUT FIZICHESKOY KHIMII AN SSSR, MOSCOW.

UNCLASSIFIED

Acc. Nr: AF0036182

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 94-97

ON THE RELATIONSHIP BETWEEN THE INTENSITY OF
SMALL ANGLE X-RAYS SCATTERING AND THE MECHANISM OF
MOISTURE EVAPORATION FROM HARDENING GYPSUM

M. A. Sorochkin, A. F. Shchurov, G. M. Pivovarov

Summary

During the investigation of hardening of β -semiaqueous gypsum by means of small angle x-rays scattering (SAS) a change in the intensity of SAS with moisture evaporation from the hardening paste was discovered. The nature of the change in SAS intensity with time has been studied for various water-gypsum ratios at the angles 3, 4, 5, 6 and 20, 25, 30 minutes. The results of the SAS intensity measurements are correlated with the ultrasound velocity. On the basis of experimental data a mechanism is suggested of dehydration of gypsum articles by surface drying, which ultimately increases the strength of the material.

VI

REEL/FRA
19721001

DR.
21

Acc. Nr. **AP0036533**

P

Ref. Code: UR 9069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
PP 33 - 36

SMALL ANGLE X-RAY SCATTERING
BY WATER-CONTAINING CONDENSATION STRUCTURES OF POLYVINYLFORMAL

G. M. Plavnik, G. M. Shtatsyn, I. N. Vladimovs

Summary

The porosity of the condensation structures of polyvinylformal subjected to treatment with an acetalizing mixture during 6 and 120 hours has been studied by the small angle x-ray scattering method. At maximum water content the scattering intensities of both samples coincide, in this case the porous structure being independent of the acetalation time. After drying the sample subjected to 6 hour acetalation shows practically no porosity. On the contrary, the porosity of the second sample remains unchanged. This indicates that upon prolonged acetalation (120 hours) the structure becomes stable to the capillary contraction forces arising during drying.

1/1

REEL/FRAME
19721381

D. sc.
7

USSR

UDC 696.259.2

BERZIN, M.A., GIBRUD, V.V., LAZARENKO, YU. V., LAZNIK, V.S., OSTASHKOV, YE. I.,
PLAVNIK, YA. YU., and SOLOLOV, V.F., Design Office of the Main Administration
of Signaling and Communication, Ministry of Railroads

"A Device for Monitoring a Locomotive's Transit of Block Section Boundaries"

USSR Authors' Certificate No 297532, Cl. B 61 1 3/20; B 61 1/03, filed 13
Sep 69, published 20 May 71 (From RZh-Avtomatika, Telemekhanika i Vychislitel'
naya Tekhnika, No 1, Jan 72, Abstract No IA3838)

Translation: A device is suggested for monitoring a locomotive's transit of
block section boundaries. It contains locomotive pick-up coils connected via
a filter to an amplifier input, a rectifier unit whose input is connected to
the amplifier output, OR circuits, a flip-flop, and an actuating unit. For
purposes of simplification the device contains code separation units, the out-
put of the rectifier unit being connected to the inputs of the code separation
units, with the outputs of the code separation units connected to the inputs
of the corresponding OR circuits, the outputs of the OR circuits connected
to the flip-flop inputs, and the flip-flop output connected to the actuating
unit input. 2 illustrations.

1/1

USSR

UDC: 621.396.69:621.319.4

IVANOVA, M. P., MIKHAYLOVA, I. P., PLAVNIK, Z. S.

"Effect of Electrode Metal on the Properties of Monolithic Ceramic Capacitors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology, Scientific and Technical Collection, Radio Components), 1970, Vol. 1 (18), pp 3-13 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V35C)

Translation: Data are given on the technological singularities of electrical properties and the structure of the dielectric of blanks for monolithic ceramic capacitors with silver-doped palladium and platinum electrodes. Bibliography of 4 titles. Ye. M.

1/1

- 118 -

USSR

UDC 621.374.5

NEUSTROYEV, S. N., BARBASOV, V. M., BLAVSKIY, I. A., SOLOV'YEV, A. K.

"An Amplitude-Time Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotki, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327584, Division H, filed 8 Jun 70, published 26 Jan 72, p 165

Translation: This Author's Certificate introduces a nanosecond pulse amplitude-time converter which contains an input emitter-follower, a discharge device, a storage capacitor, a discharge current stabilizer and a pulse shaper. As a distinguishing feature of the patent, the linearity and stability of the conversion factor are improved and the dynamic range of convertible amplitudes is extended by connecting the storage capacitor to the output of the emitter-follower through a series circuit made up of a differentiating stage and a charging device based on a diode-transistor switching circuit. The input of the pulse shaper is connected to the storage capacitor through a series circuit made up of a decoupling stage and a nonlinear differentiating stage.

1/1

1/3 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--MECHANISM OF ELECTRICAL CONDUCTIVITY OF CARBONIZED MATERIALS BASED ON PETROLEUM COKE -U-
AUTHOR--(03)-PLECHEV, V.N., PEKIN, P.V., SHULEPOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (2), 120-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ACTIVATION ENERGY, COKE, PETROLEUM PRODUCT, ENTHALPY, HALL EFFECT, CHEMICAL REACTION MECHANISM, ELECTRICAL CONDUCTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1849

STEP NO--UR/0467/70/000/002/0120/0124

CIRC ACCESSION NO--AP0130679

UNCLASSIFIED

2/3 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130679

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

ABSTRACT. RESISTIVITY ρ AND THERMAL EMF. COEFFS. ALPHA AT 100-1100DEGREEK WERE MEASURED AND HALL CONSTS. ρ ACTIVATION ENERGIES ΔE_{SUB1} AND ΔE_{SUB2} , ELEC. CURRENT CARRIER CONCS. N, AND EFFECTIVE MOBILITIES μ WERE CALCD. FOR POWD. PETROLEUM COKE COAL TAR PITCH MIXTS. SINTERED AT 870-2720DEGREEK. THE TEMP. COEFFS. OF ρ WERE NEG. ΔE_{SUB1} , THE THERMAL ACTIVATION OF THE ELECTRONS FROM THE VALENCE TO THE COND. ZONE, AND ΔE_{SUB2} , THE ENTHALPY OF ACTIVATION OF ELECTRON MOBILITY, DECREASED WITH INCREASING TEMP. FROM 0.57 AND 0.120 EV AT 870DEGREEK TO 0.20, 0.09, 0.043 AND 0.002, 0.001, AND 0.001 EV AT 1690, 2070, AND 2470DEGREEK. FOR SAMPLES PREPD. AT THE EXTREMES OF THE TEMP. RANGE, ALPHA SHOWED SHARP MAX. (40 AND 8 MV-DEGREEK AT 200-400DEGREEK FOR SAMPLES CARBONIZED AT 950 AND 2720DEGREES, RESP.), THE POSITIONS OF WHICH DEPENDED ON THE CARBONIZATION TEMP., WHEREAS, FOR THOSE PREPD. AT 1373 AND 1910DEGREEK, ALPHA INCREASED STEADILY BUT MUCH MORE GRADUALLY THE LOWER THE CARBONIZATION TEMP. THE HALL CONSTS. WERE 8, 3.8, 1.9, MINUS 1.7, MINUS 2, MINUS 3.4, 3.5, 11.5, 21.5, 13.8, AND 4.0 CM PRIME3 COLUMB AT 970, 1070, 1170, 1370, 1570, 1690, 1910, 2070, 2270, 2470, AND 2720DEGREEK. AT 870 TO 1000DEGREEK, μ WAS SMALLER THAN 1 CM PRIME2-V-SEC AND THE JUMP MECHANISM WAS APPLICABLE; ABOVE 1000DEGREEK, μ WAS GREATER THAN 1 CM PRIME2-V-SEC AND THE ZONAL MECHANISM WAS VLID.

UNCLASSIFIED

3/3 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130679

ABSTRACT/EXTRACT--REFLECTING THE DEGREE OF FILLING OF THE VALENCE ZONE AND
ACTIVATION OF PI ZONE ELECTRONS, THE VARIATION OF N WITH GRAPHITIZATION
TEMP. SHOWED TWO MAX. AT SIMILAR TO 1250 AND 1800DEGREESK, BETWEEN WHICH
COND. RESULTED FROM ELECTRON CURRENT AND BELOW AND ABOVE WHICH IT
RESULTED FROM HOLE CURRENT. FACILITY: CHELYABINSK. GOS.
PEDAGOG. INST., CHELYABINSK, USSR.

UNCLASSIFIED

1/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ACTION OF PYRIMIDINE DERIVATIVES ON PHAGOCYtic CAPACITY OF RETICULUM
ENDOTHELIAL SYSTEM AND LEVOMYCETIN THERAPY EFFICIENCY OF EXPERIMENTAL
AUTHOR--(02)--ALEKHIN, YE.K., PLECHEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 540-544

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS AUREUS, SALMONELLA TYPHIMURIUM, SELECTIVE DRUG
EFFECT, URACIL, PYRIMIDINE, LEVOMYCETIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--2000/1866

STEP NO--UR/0297/70/015/006/0540/0544

CIRC ACCESSION NO--AP0125477

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125477

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF METHACYL (4,METHYLURACYL) AND OXYMETHACYL (5, HYDROXY,4,METHYLURACYL), TWO PYRIMIDINE DERIVATIVES, AS WELL AS THE EFFECT OF THEIR COMBINATIONS WITH LEVOMYCETIN ON THE ABSORPTION FUNCTION OF THE RETICULO ENDOTHELIAL SYSTEM AND RESISTANCE TO EXPERIMENTAL INFECTIONS WAS STUDIED ON MICE. THE ACTIVITY OF THE RETICULO ENDOTHELIAL SYSTEM WAS ESTIMATED BY CLEARANCE FROM P PRIME32 LABELED STAPHYLOCOCCI INTRODUCED INTRAVENOUSLY. ORAL ADMINISTRATION OF OXYMETHACYL AND METHYLURACYL IN DOSES OF 50 AND 200 MG-KG RESPECTIVELY FOR A WEEK STIMULATED THE ABSORPTION ACTIVITY OF THE RETICULO ENDOTHELIAL SYSTEM SUPPRESSED BY LEVOMYCETIN (50 MG-KG). OXYMETHACYL WAS A MORE ACTIVE STIMULATOR OF THE RETICULO ENDOTHELIAL SYSTEM. IT INCREASED THE EFFICIENCY OF LEVOMYCETIN THERAPY OF EXPERIMENTAL INFECTIONS CAUSED BY STAPH. AUREUS AND S. TYPHIMURIUM TO A GREATER EXTENT THAN METHYLURACYL. FACILITY: BASHKIR MEDICAL INSTITUTE, UFA.

UNCLASSIFIED

PLEKHANOV, A.

MEDICINE

MORE ON MANAGEMENT OF RURAL PUBLIC HEALTH SERVICES

DOC: AIA 2(47-22)195: 77(249, 1)

SO: 1PR5 53652

Article by A. Plekhanov, Chief physician of Sakharov Central Rayon Hospital, Novosibirskaya oblast: Moscow, Sovetskoye Zdravochraneniye, Russkaya. No 6, 1971, submitted 13 February 1971, pp 13-17.

The article by P.G. Gligor'yev [1] and the responses to it [2] prompted me to voice my opinion on the timely issue of rural public health services and of strengthening the administrative link which they discussed.

Our Lakhimsky Rayon is the largest in Novosibirskaya oblast with respect to size of population (90,000 people). The network of its therapeutic institutions includes a central rayon hospital with 500 beds, a 100-bed children's hospital, 50-bed tuberculosis dispensary, 13 health stations at plants, seven district hospitals, 55 feldsher and feldsher-ambulance stations, four creches and a third category sanitary epidemiological station. The radius served extends over 80 kilometers. The central rayon hospital is in a city under oblast jurisdiction, i.e. its services both urban and rural residents who are about evenly divided.

After the unification of rural and municipal public health services in 1964, it became apparent that management thereof would be difficult: it would be difficult to combine the management of a large central rayon hospital and of other institutions in the city and rural areas. This was confirmed by the experience of the last seven years, but, at the same time, elimination of rayon and municipal public health departments, the merging of rural and municipal public health services had a beneficial effect on the quality of medical care. What was the former rayon hospital? Its capacity was 100 beds. The staff of its four departments numbered 7-8 physicians, and the laboratory was staffed by two intermediate medical workers. Today it is a modern hospital serviced by 78 doctors. It has excellently equipped clinical, biochemical, bacteriological, and serological laboratories, whereas even the most complicated tests are done. The hospital departments are laboratory, gynecological, and infectious (for children and adults) with 100 beds, a surgical department with 65 beds, traumatology with 50, neurology with 45 beds, etc.

USSR

UDC 621.374

PLEKHANOV, S. P., FINOGENOV, B. S., MEDVEDEV, N. N., PLEKHANOV, L. P.

"A Square Pulse Shaper Based on Integrated Circuitry"

Moscow, Otkryitya, izobreteinya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290435, division H, filed 21 Aug 67, published 22 Dec 70, p 157

Translation: This Author's Certificate introduces a square pulse shaper based on integrated circuits which are made up of individual cells in the form of crystals containing two transistors with common collector. As a distinguishing feature of the patent, the device is designed to shape pulses with a greater duration than that of pulses produced when the cells are connected in series. The shaper is made as a minimum on four cells, the input signal being sent simultaneously to the supply lead of the third cell and to one of the inputs of the first cell. The output of the first cell is connected to one of the inputs of the second cell. The collectors of the transistors in the second cell are connected directly to the supply source, and the emitters are connected to one of the inputs of the third cell, the output of this cell being connected simultaneously to the two inputs of the fourth cell.

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USSR

UDC 621.374

PLEKHANOV, S. P., FINOCENOV, B. S., MEDVEDEV, N. N., PLEKHANOV, L. P.

"A Square Pulse Shaper Based on Integrated Circuitry"

Moscow, Otkryitya, izobreteinya, promyshlennyye obratzsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290435, division H, filed 21 Aug 67, published 22 Dec 70, p 157

Translation: This Author's Certificate introduces a square pulse shaper based on integrated circuits which are made up of individual cells in the form of crystals containing two transistors with common collector. As a distinguishing feature of the patent, the device is designed to shape pulses with a greater duration than that of pulses produced when the cells are connected in series. The shaper is made as a minimum on four cells, the input signal being sent simultaneously to the supply lead of the third cell and to one of the inputs of the first cell. The output of the first cell is connected to one of the inputs of the second cell. The collectors of the transistors in the second cell are connected directly to the supply source, and the emitters are connected to one of the inputs of the third cell, the output of this cell being connected simultaneously to the two inputs of the fourth cell.

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USSR

UDC:669.017:539.434

KONOPLENKO, V. P., PLEKHANOV, V. A. and POLYAKOV, V. N., Moscow
Engineering Physics Institute

"The Accumulation of Deformation and Changes in the Nature of Rupture
of KH18N12T Steel During Thermal Cycling Loading"

Kiev, Problemy Prochnosti, No 2, Feb 74, pp 38-40

Abstract: The change in the nature of rupture of KH18N12T steel during thermal cycling loading is studied as a function of the unidirectional accumulation of deformations after various degrees of hardening. It is shown that with preliminary exhaustion of ductility of the material, the probability of brittle fatigue rupture increases.

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USSR

UDC 543.51:547.1'118

KOSTYANOVSKIY, R. G., PLEKHANOV, V. G., IGNATOVA, N. P., BOBKOVA, R. G., and
SHVETSOV-SHILOVSKIY, N. I., Institute of Chemical Physics, Academy of Sciences
USSR

"Mass Spectra of 1,2,3-Phosphadiazoles"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71,
p 2611

Abstract: The authors studied the electron impact-induced decay of a new class
of compounds with a 2-coordinate phosphorus atom. Mass spectral data confirm
the aromatic character of 1,2,3-phosphadiazoles.

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USSR

UDC 541.63+541.124.547.491

KOSTYANOVSKIY, R. G., EL'NATANOV, YU. I., and PLEKHANOV, V. G., Institute
of Chemical Physics, Academy of Sciences USSR

"Absence of p- π -Resonance in Cyano- and Acylphosphine Vinyls"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10,
Oct 71, p 2355

Abstract: Addition of di-tert-butylphosphine to activated acetylenes gave
(Me₃C)₂PCH₂CHX type of compounds, where X = CN (I) or COOCH₃ (II).

The reaction was highly stereospecific yielding cis-(I) and trans-(II).
On the basis of spectral data and because the cis-trans-isomerization did
not occur smoothly at 150-200°, it has been concluded that there is no
p- π -resonance in these compounds.

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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIMENTAL DETERMINATION OF THE LUMINESCENCE EFFICIENCY OF SOME
ZINC SULFIDE PHOSPHORS -U-
AUTHOR--(03)-NYMM, U.KH., PLEKHANOV, V.G., RAMMO, I.KH.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(1) 153-5

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LUMINESCENCE, PHOSPHORUS COMPOUND, ZINC SULFIDE, CADMIUM
SULFIDE, COPPER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1797

STEP NO--UR/0368/70/012/001/0153/0155

CIRC ACCESSION NO--AP0054631

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0054631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENCE EFFICIENCY OF PHOSPHORS ZNS-CU, ZNS (60 MOLE PERCENT)-CDS-CU, AND CDS-CU (10 PRIME NEGATIVE2 AND 2 TIME 10 PRIME NEGATIVE2PERCENT) WERE DETD. FROM ENERGY YIELDS AND LUMINESCENCE SPECTRA. ZNS-CU WAS IRRADIATED AT 365, ZNS (60 MOLE PERCENT)-CDS-CU AT 436, AND CDS-CU AT 546 NM. THE EFFICIENCIES OF ZNS-CU AND ZNS (60 MOLE PERCENT)-CDS-CU WITH PREDOMINANTLY LONG WAVE LUMINESCENCE WERE VERY HIGH; THOSE OF PHOSPHORS WITH SHORT WAVE LUMINESCENCE IN ALL CASES WERE LOWER.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ANIONOTROPIC REARRANGEMENT OF N, (ALPHA ALPHA
DIFLUOROALKYL)ETHYLENIMINES -U-
AUTHOR--KOSTYANOVSKIY, R.G., SAMOYLOVA, Z.YE., PLEKHANOV, V.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 201
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, ETHYLENE, IMINE, NMR SPECTRUM,
MASS SPECTRUM, INTRAMOLECULAR MECHANICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1614 STEP NO--UR/0062/70/000/001/0201/0201
CIRC ACCESSION NO--AP0100224
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROLONGED STORAGE IN GLASS OF I,
OR THE ACTION OF MED PRIME NEGATIVE IONS ON THEM CAUSES RING OPENING AND
MIGRATION OF F ANIONS. THUS, I (R EQUALS CF SUB3 OR F) WERE CONVERTED
RESP. INTO (CF SUB3) SUB2 CHCF:NCH SUB2 CME SUB2 F, B SUB25 44-50DEGREES,
N PRIME25 SUBD 1.3339 (WHICH ON HYDROLYSIS GAVE (CF SUB3) SUB2 CHC(NHCH
SUB2 CME SUB2 F, M. 148.5DEGREES), AND MIXED (1:1) CF SUB3 CHFC(OME):
NCH SUB2 CME SUB2 OME AND CF SUB3 CHFC(OME):NCH SUB2 CME SUB2 F, B SUB14
66-9DEGREES. THE PRODUCTS WERE CHARACTERIZED BY NMR AND MASS SPECTRA.

UNCLASSIFIED

USSR

UIC: 621.396.2:551.510.52 2

BERNOSKUNI, Yu. V., VAYZBURG, G. M., GUSYATINSKIY, I. A., KOZLOV, V. V.,
NEMIROVSKIY, A. S., PLEKHANOV, V. V.

"Experimental Research on a New Method of Combatting Signal Fading on
Long-Range Tropospheric Transmission Lines ('Accord')"

Tr. NII radio (Works of the Scientific Research Institute of Radio), 1972,
No 1, pp 55-62 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8A342)

Translation: The paper presents the results of experimental studies of
the "Accord" system on a long-range ultrashort-wave tropospheric trans-
mission line. The gain over standard quadrupled reception is determined.
Resumé.

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- 20 -

USSR

UDC 621.396.621.59:621.391.812.7(088.6)

VAYSBURG, G. M., GUSYATENSKIY, I. A., KOZLOV, V. V., NEMIROVSKIY, A. S., ~~PLEKH-
ANOV, V. V.~~, BERKOSKURI, YU. V.

"Device for Signal Reception with Equivalent Frequency Spacing"

USSR Author's Certificate No 296221, filed 21 Jul 1969, published 8 Apr 1971
(from ~~Radio Engng. Electron. Phys.~~, No 1, 1972, Abstract No 1D78P)

Translation: A device is introduced for signal reception with equidistant frequency spacing containing heterodynes and two frequency converters connected in series to it, the input signal to the first of which is fed directly and the input signal to the second of which is fed via a delay line. The device also includes a phase detector one of the inputs of which is connected to the output of the first converter via a band filter. For reception of $N - 1$ signals with equidistant frequency spacing by one device, for a decrease in distortions, a phase modulator the control input of which is connected to the output of the phase detector is included between the output of the mentioned heterodyne and the other input of the phase detector. The delay of the delay line is selected equal to the inverse of the frequency separation, and the pass band of the band filter is selected not exceeding twice the magnitude of the frequency separation

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USSR

UDC 548.4

2

P

MINTS, R. I., KORTOV, V. S., MELEKHIN, V. P., ~~KISLITSIN, Ye. A.~~
PLEKHANOVA, E. A., and PESHCHIN, G. F., Ural Polytechnic Institute
Imeni S. M. Kirov

"Effect of Deformation on Electron Work Function and Exoemission From
Surface of Noble Metals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 7, 1970,
pp 37-42

Abstract: The article describes results of a study of regularities in
the exoemission effect in the deformation of noble metals (silver,
gold, platinum, and palladium). Changes in the electron work function
and exoelectronic emission of the metals were studied under various
types of deformation (tension, grinding, polishing). The electron
work function was studied by measuring the contact potential differ-
ence by the dynamic capacitor method. The results indicate that plas-
tic deformation due to surface tension and machining is accompanied by
a decrease in the electron work function. This means that there is a

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USSR

MINTS, R. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy --
Fizika, No 7, 1970, pp 37-42

decline in the potential barrier value and an increase in the probability of electron emission. This effect manifests itself in the appearance of exoelectronic emission, the intensity of which depends on the degree of deformation. Simultaneous measurement of these quantities makes it possible to establish the interrelationship between the changes observed in the surface electric properties and disturbance of the surface structure and the physicochemical processes initiated by deformation.

2/2

USSR

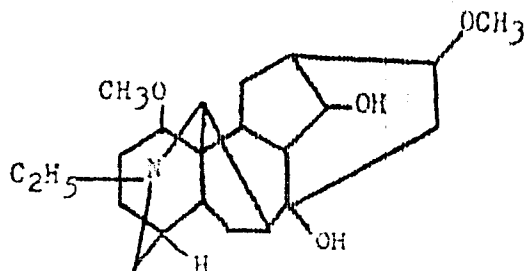
UDC 547.944/945

MURAV'YEVA, D. A., PLEKHAHOVA, T. I., and YUNUSOV, M. S., Pyatigorsk
Pharmaceutical Institute of the Order of Labor Red Banner Institute of
Chemistry of Natural Products, Academy of Sciences UzSSR

"Novel Diterpene Alkaloid From Aconitum Nasutum"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1972, pp 128-129

Abstract: A new alkaloid was isolated from *Aconitum nasutum* Fisch et Rehb., which the authors named aconasine. Its melting point is 148°, it is soluble in methanol, chloroform, slightly soluble in benzene, acetic anhydride and acetone, and insoluble in ether and hexane. The following structure has been assigned to this alkaloid:



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1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SODIUM NITRITE, SODIUM NITRATE, SODIUM HYDROXIDE WATER SYSTEMS -U-

AUTHOR--(02)-PLEKHOTKIN, V.F., BOBROVSKAYA, L.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1643-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, SOLUBILITY, SODIUM HYDROXIDE, NITRITE,
SODIUM NITRATE, HEAT OF HYDRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/1388

STEP NO--UR/0078/70/015/006/1643/1647

CIRC. ACCESSION NO--AP0135042

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135062

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. AND PHYS. PROPERTIES OF
SOLNS. OF NAX-NAOH-H SUB2 O SYSTEMS (WHERE X EQUALS NO SUB2 OR NO SUB3)
ARE GIVEN. THE SYSTEMS ARE OF SIMPLE EUTONIC TYPE. DELTAg OF NAOH.H
SUB2 O FORMATION IS MINUS 0.923 KCAL-MOLE.

Acc. Nr: **AP0049123** - Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
UR 0366

99839b Mechanism of the rearrangement of secondary acetylenic alcohols in an acid medium. II. Nature of the carbocation formed during the rearrangement of aliphatic-aromatic acetylenic alcohols. Plekhotkina, M. M.; Karavai, V. S.; Favorskaya, I. A. (Leningrad. Gos. Univ., Leningrad, USSR). *Zh. Org. Khim.* 1970, 8(1), 45-7 (Russ). The isomerization of $p\text{-XC}_6\text{H}_4\text{CH(OH)C}\equiv\text{CCMe}_2$ (I) (X is Cl, H, Me, OMe) to $p\text{-XC}_6\text{H}_4\text{CH(OH)CH}_2\text{C}\equiv\text{CCMe}_2$ in acid solns. may involve either $p\text{-XC}_6\text{H}_4\text{CH(OH)CH}_2\text{C}^+\text{CMe}_2$ (II) or $p\text{-XC}_6\text{H}_4\text{CH(O}^+\text{H}_2\text{)C}\equiv\text{CCMe}_2$ (IIIa). There is only inductive interaction between X and the reactive center in II. In IIIa there is, besides inductive interaction, also conjugation between X and O^+H_2 . The exptl. rate detn. for I isomerization in dioxane-HClO₄ showed that IIIa is the carbocation species actually formed.

CFJR

REEL/FRAME
19800929

de 7

Acc. Nr: AP0052068

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Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i
Eksperimental'naya Terapiya, 1970, Vol 14,
Nr 1, pp 12-17

ELECTRIC ACTIVITY OF THE BRAIN IN REVIVAL BY THE METHOD OF ARTIFICIAL CIRCULATION AFTER PROLONGED PERIODS OF ARREST OF THE HEART

V. F. Portnov. S. I. Plekhotkina. V. A. Chernyak

Chronic experiments were performed on dogs which sustained prolonged clinical death (from 5 to 12 minutes) caused by desanguination. Electric activity of the brain was studied the first 6 to 8 hours from the commencement of revival, and at the remote periods (in 1-3 days, 1, 2, and 9 months). The dogs were revived with the aid of extra-corporeal circulation. In the series with general perfusion the first signs of electrical activity appeared 29.1 ± 2.8 minutes from the beginning of perfusion, and its changed to continuous in 16.2 ± 3.5 minutes. In the series with coronaro-carotid perfusion with subsequent donor circulation the electrical activity appeared in 27.3 ± 1.8 minutes. Its formation into continuous was very rapid, taking 2.6-1.9 minutes on the average. In the majority of experiments EEG was immediately continuous. A frequent rhythm of alpha- and beta-range alternating with the waves of theta- and delta-range dominated in 6 to 8 hours from the commencement of the revival. EEG recorded in dogs 2 to 9 months after the revival failed to differ from the initial, and the animals' behaviour was normal.

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19820606

11 2

Acc. Nr: A90044830

Ref. Code: UR0531

PRIMARY SOURCE: Khirurgiya, 1970, No 1, pp 85-94

THE MECHANISM OF ETHER, BARBITURATE AND EPONTOL ANESTHESIA

Darbinyan, T. M.; Golovchinskiy, V. D.; Plekhotkina, S. I.

In experiments on 35 cats the authors studied the influence of intranarcon, ether and epontol on the excitability of the cortex of large hemispheres and reticular formation of the mid-brain. It was found that in intranarcon administration the transcallosal responses changed but little. Inhalation of ether caused an early inhibition of evoked responses in the reticular formation. The thresholds of desynchronization of EEG in electric stimulation of the reticular formation did not change. The marked reduction of the amplitude of transcallosal responses enables to conclude that ether anesthesia is associated with block of the cortex and not the reticular formation. Introduction of epontol caused a less marked inhibition of EEG desynchronization than in the action of intranarcon; reduction of the amplitude of evoked responses did not noticeably differ from that after the administration of intranarcon. The amplitude

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REEL/FRAME
13771684

USSR

UDC 616.12-008.315-03:616.12-787-07:616.831-073.97

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PORTNOY, V. F., PLEKHOTKINA, S. I., and CHERNYAK, V. A., Laboratory of Artificial Circulation and Experimental Surgery, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Electrical Activity of the Brain After Resuscitation by Extracorporeal Circulation Following Prolonged Cardiac Arrest"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 12-17

Abstract: The bioelectrical activity of the brain was studied in dogs resuscitated by extracorporeal circulation after 5-12 min of cardiac arrest. In a series of experiments with general perfusion, the first signs of electrical activity appeared after 29.1 ± 2.8 min, in the form of low-amplitude slow waves, that gradually became continuous with increasing amplitude and frequency. Within 4-6 hr from the start of resuscitation, the slow theta and delta waves were dominant on the EEG. In another series of experiments with coronary-carotid perfusion, electrical activity appeared after 27.3 ± 1.8 min, becoming continuous within 1.9-2.6 min. Within 6-8 hours the alpha and beta waves were alternating with the theta and delta waves.

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PORTNOY, V. F., et al., Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 12-17

According to EEG studies 2-9 months later, bioelectrical activity was the same as before the experiment. The animals' behavior was also normal.

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USSR

UDC: 621.374.5(088.8)

CHAZOV, O. A., PLEKHOV, B. V., Sarapul Radio Plant

"A Delay Line"

USSR Author's Certificate No 269988, filed 9 Feb 66, published 26 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G320 P)

Translation: This Author's Certificate introduces a delay line made in the form of one or more helical springs which work in the torsional vibration mode. The delay line is equipped with input and output converters. In order to improve the interference resistance of the delay line, its input converter is made in the form of a loop of thin current-conducting wire, the two lateral sides being placed between the polepieces of an E-shaped magnet. The output converter is formed by two parallel placed piezoelectric elements fitted with end shoes and connected by a Y-shaped jumper.

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USSR

BARYKIN, N. P., POYUROVSKIY, Yu. V., NIKOLAYEV, V. A., VASHURIN, A. M.,
PLEKHOV, V. A.

"Calculation of Thermoelastic Stresses During Cooling of Stamps at Various Rates"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], 1971, No 25, pp 111-119, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V43, by N. T. Glazunova).

Translation: This article presents results of theoretical and experimental studies of the stress field in heated, hollow, thickwall, long cylinders cooled in various media. Axisymmetrical distribution of temperature in the cross section is assumed. The temperature field along the cylinder is assumed constant. Under these conditions, the temperature and corresponding stress field in the body in the radial direction are described by certain logarithmic rules. For long bodies of rectangular cross section, the author's recommend that the actual contour be replaced by an equivalent cylinder, with the condition of equality of areas of side surfaces. The results of the study are illustrated by graphs of temperature stresses in cylindrical stamps of type 5KhNV steel, cooled in oil and in air. §
Biblio. Refs.

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USSR

PLEKHOV, V. A., BERDASHKEVICH, N. A., BARYKIN, N. P., KAGANOV, A. A.

"Study of Plasticity and Deformation Resistance of EP503 Steel"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], 1971, No 25, pp 127-134, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V1180 by R. A. Vasin).

Translation: Results are presented from standard tensile and upsetting tests of EP303 steel specimens in the 80-1,300° temperature range. The dependence of the basic characteristics of the steel on temperature and degree of deformation is presented in graphic form; the change in microstructure of specimens at various temperatures is shown.

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USSR

WDC 547.26'118:541.49

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., SAFIULLINA, N. R., MUSINA, A. A., and PUDOVIK, A. N., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Stereoisomers of Partial Esters of Phenylphosphonous Acid and Their Complexes With Stannic Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1692-1696

Abstract: Complexes of partial esters of phenylphosphonous acid with stannic chloride were synthesized yielding $[(RO)C_6H_5P(O)H]_2 \cdot SnCl_4$ where R - methyl, ethyl, n-propyl, iso-propyl, and n-butyl. A detailed analysis of IR- and PMR- spectral data was carried out. It was proposed that the stereoisomerism of these complexes is due to different orientation of the phenyl ring plane in the phenylphosphonite with respect to the P-H bond.

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USSR

UDC 547.26'118:541.49

MURATOVA, A. A., YARKOVA, E. G., PLEKHOV, V. P., ZAGETOVA, R. G., and
PUDOVIK, A. N.

"Study of Complexes of Dialkylphosphinous Acids With Tin, Titanium, and
Zirconium Halides"

Abstract: The authors studied reactions of di-n-butylphosphinous, diphenyl-
phosphinous, dicyclohexylphosphinous, di-n-hexylphosphinous, di-n-octyl-
phosphinous acids with tetrachlorides of tin, titanium, and zirconium and
with tin tetrabromide. The obtained complexes had an $[R_2P(O)H]_2 \cdot MeX_4$
composition. Their infrared spectra were studied in the 400-4000 cm^{-1}
region. The results are shown in a table containing information on 21
complexes.

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USSR

UDC 547.26'118:541.49

MURATOVA, A. A., PLEKHOV, V. P., YARKOVA, E. G., and PUDOVIK, A. N., Karan'
State University Imeni V. I. Ul'yanov-Lenin

"Deamination of N,N-Diethylamidoisopropyl Phosphite in a Stannic Chloride
Complex"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 436-437

Abstract: Reaction of a 1:1 mixture of N,N-diethylamidoisopropyl phosphite and stannic chloride yields a complex -- a viscous colorless product which is stable only at low temperature. At room temperature it breaks down precipitating a white solid of the composition $(C_2H_5)_2NH \cdot SnCl_2$. Evidently a redox process occurs with the elimination of the P-N bond and formation of a secondary amine.

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USSR

UDC 547.26'118:541.49

YARKOVA, E. G., MUSINA, A. A., PLEKHOV, V. P., MURATOVA, A. A., and
PUDOVIK, A. N., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Electron Effect of an Acceptor on the Rotational Isomers of Certain
Organophosphorus Ligands"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,576-2,577

Abstract: Infrared and paramagnetic resonance spectral data on several rotational isomers of organophosphorus ligands were obtained. Specifically, the complex $[(CH_3O)C_2H_5F(O)H]_2 \cdot SnCl_4$ exhibited the presence of the 1040, 1060, and 810, 823 cm^{-1} bands, instead of the two bands ν_{C-O} (1030 and 1070 cm^{-1}) and ν_{P-O} (790 and 805 cm^{-1}) in the spectrum of the methyl ester of ethylphosphonous acid, while unexpected doublets appeared in the p. resonance spectrum of the starting ester. The existence of complexes with several different isomers of the methyl ester of ethylphosphonous acid is suggested by the spectral data. Variation in the $^3J(P-O-C-H)$ constants suggests a mesomeric effect in the case of one isomer, owing to its favorable spatial location, with corresponding reduction in length of the P-O bond and a certain loosening of the O-C bond. Other structural effects are postulated.

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