USSR

GALENKO, P. P., et al., Doklady Akademii Nauk BSSR, Vol 15, No 2, 1971, pp 134-136

The mechanism for photographic recording of the loading curve and the hysteresis loop consisted of mirrors with illuminators, a tape drive mechanism, photographic tracing paper, and an electronic module for remote control of the stand. The stand is designed for testing small specimens at different temperatures and over a wide range of deformation rates.

2/2

AA0038808

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

238027/INDUSTRIAL INDUCTION FURNACE has a primary
  coil which is so designed that it serves
at the same time as a sealed furnace casing:
Coil 1 is a copper tube and its turns 2 are wrapped
with glass mica tape. The finished coil is placed
between two plates of glass textolite 3,4, and held
together by tie rods. A layer of epoxy resin and glass
fibre cloth is then applied to the outer surface,
and allowed to polymerise. Cover and bottom 8,9,
of the finished furnace are also lined with glass
textolite. 18.5.62. as 778519/24-7. B.P.LOBASHEV
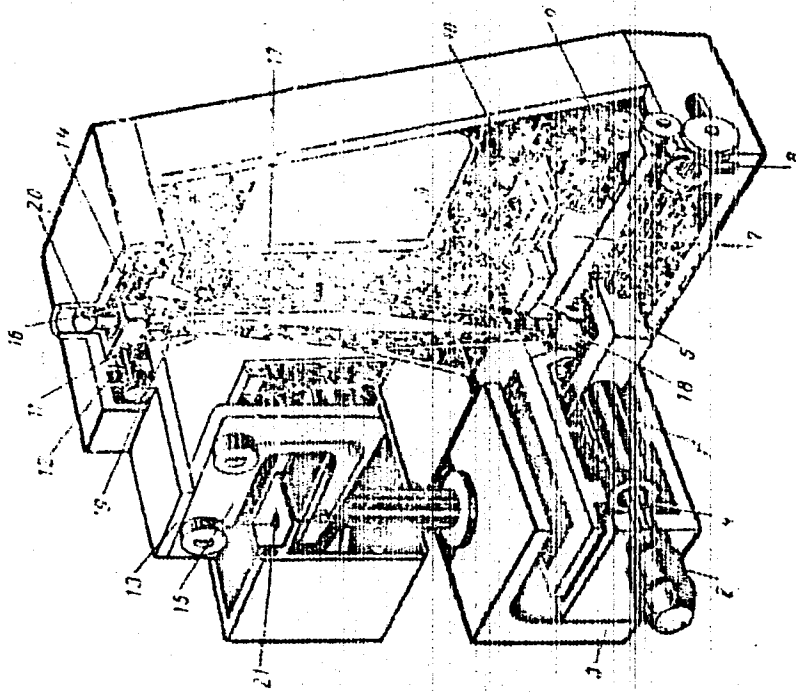et alia. (4.7.69.) Bul.9/20.2.69. Class 21h.
Int Cl. H05b.

18

AUTHORS: Lobashev, B. P.; Kunitskiy, V. N.; Spetsovskiy,
M. N.; and Fomin, A. A.

19740016

AA0038808

19740017

USSR

UDC 621.384.634

BASARGIN, YU. G., KOMAR, YE. G., LOBASHEV, V. M., Corresponding Member of the Academy of Sciences USSR, and SHUKEYLO, I. A., Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad, and Leningrad Institute of Nuclear Physics imeni B. P. Konstantinov

"Medium-Energy Proton Synchrotron as Source of Intense Kaon Beams"

Abstract: The best source for obtaining medium-energy kaons is a 5- to 7-Gev proton accelerator. It is difficult to determine current requirements at the present time, but if existing programs for the modernization of operating accelerators are considered, then apparently the immediate problem is to increase intensity by ~ 2 orders; that is, a medium current of 100 microamperes. This is not beyond present-day technical capabilities if a fast synchrotron with an injector-linear accelerator of the "meson factory" type is used.

1/1

USSR

UDC   621.373.826:550.3

LOBKOV, N. M. and CHISTYAKOV, A. B.

"Experimental Investigation of the Effect of the Dimensions of the Transmitting Aperture and the Focusing of the Laser Beam on the Laws of Distribution of the Signal Level Fluctuations in a Turbulent Atmosphere"

Translation: Results are given of an investigation into the distribution density of laser beam fluctuations ($\lambda = 0.63 \mu$) for various beam focusings and aperture output dimensions. With an increase in the aperture, the law of fluctuation distribution approximates the symmetrical, where the maximum distribution density shifts toward the higher levels. Data is given of the effect of the aperture dimensions and the beam focusing on the statistical characteristic of the signal as a function of the dimensions of the receiving aperture and the wind velocity. A. L.

1/1

USSR   UDC: 621.396.677.012.12

LOBKOV, M. M.

"Effect of a Highly Nonuniform Medium on the average Radiation
Pattern of an Antenna"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t
svyazi. Vyp. 3 (Materials of the Scientific and Technical Con-
ference of Leningrad Electrical Engineering Institute of Com-
munications--collection of works, No 3), Leningrad, 1971, pp
230-233 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B8)

Translation: Expressions are given which describe the average
radiation pattern of an antenna with rectangular aperture lo-
cated in a medium with strong fluctuations in permittivity.
Bibliography of five titles. Resumé.

1/1

_ A _

1/2   018   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--SURFACE TENSION OF KRYPTON, METHANE, DEUTEROMETHANE, AND OXYGEN -U-

AUTHOR-(04)-BLAGOY, YU.P., KIREYEV, V.A., LOBKO, M.P., PASHKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(3), 427-32

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SURFACE TENSION, KRYPTON, METHANE, OXYGEN, DEUTERIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0948   STEP NO--UR/0185/70/015/003/0427/0432

CIRC ACCESSION NO--AP0136379
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0136379

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENTIAL METHOD OF
  CAPILLARY RISE WAS USED TO DET. THE TEMP. DEPENDENCE OF THE SURFACE
  TENSION, SIGMA, FOR KR, CH SUB4, CD SUB4 AND O SUB2 OVER THE ENTIRE
  RANGE OF TEMPS. AT WHICH THEY EXIST IN THE LIQ. FORM. THE RESULTS ARE
  TABULATED AND SHOWN GRAPHICALLY ALONG WITH THE OTHER EXPTL. DATA. THE
  RESULTS CAN BE DESCRIBED BY THE VAN DER WAALS EQUATION. THE DEVIATIONS
  WERE DISCUSSED FROM THE LAW OF CORRESPONDING STATES FOR A LARGE NO. OF
  SUBSTANCES AND THE REASONS FOR THE DEVIATIONS WERE CONSIDERED.
  FACILITY: FIZ. TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

LOBKOV E.U.

AP9053076

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 62-65

A. A. Opalovsky, V. E. Fyodorov,
B. G. Erenburg, E. U. Lobkov, L. N. Senchenko

NEW X-RAY DATA
ON TUNGSTEN AND RHENIUM SELENIDES

Complete tables of interplanar distances for WSe_2 and $ReSe_2$ have been determined;
the WSe_2 lattice constants have been corrected.
$ReSe_2$ prepared from elements is a new structure modification.

1/2   016   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--SYNTHESIS AND X RAY DIFFRACTION STUDY OF TUNGSTEN AND RHENIUM
   TELLURIDES -U-
AUTHOR-(05)-OPALOVSKIY, A.A., FEDOROV, V.YE., LOBKOV, E.U., ERENBURG,
   V.G., SENCHENKO, L.N.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 561-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--X RAY DIFFRACTION, TUNGSTEN COMPOUND, TELLURIDE, RHENIUM
   COMPOUND, CHALCOGENIDE GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0898   STEP NO--UR/0363/70/006/003/0561/0563

CIRC ACCESSION NO--AP0118067
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0118067
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. W-TE AND RE-TE MIXTS. AT A METAL
CHALCOGEN RATIO OF 1:2 WERE HEATED IN EVACUATED AND SEALED QUARTZ
AMPULES AT A RATE OF 8-10DEGREES PER MIN. AND CALCINED AL SUB2 O SUB3
SERVED AS THE DTA REF. THE HEATING CURVES ARE CHARACTERIZED BY 2
HEATING EFFECTS, OF WHICH THE ENDOTHERMAL EFFECT IS CAUSED BY THE
MELTING OF TE AND THE EXOTHERMAL EFFECT CORRESPONDS TO OXIDN. OF THE
METAL WITH TE. THIS MEANS THAT THE REACTION BETWEEN W AND RE PROCEEDS
ONLY WITH FUSED CHALCOGEN. THE RATE OF THE HETEROGENEOUS REACTIONS IS
STRONGLY DEPENDENT ON THE INTERACTION SURFACE, WHICH VARIES
SIGNIFICANTLY IF GAS IS USED IN THE REACTION. WTE SUB2 WAS SYNTHESIZED
AT 750DEGREES FOR 25-30 HR, AND RETE SUB2 AT 800DEGREES FOR 60-5 HR.
THE SAMPLES WERE STUDIED BY X RAY PHASE AND IR ANALYSES. THE UNIT CELL
PARAMETERS WERE CALCD. BY USING COMPUTERS. THE AGREEMENT BETWEEN THE
MEASURED AND THE CALCD. D SUBHKL VALUES WAS NOT VERY GOOD, ESP. IN THE
LARGE ANGLES REGION.   FACILITY: INST. NEORG. KHIM., NOVOSIBIRSK,
USSR.

UNCLASSIFIED

USSR

UDC: 621.396.67.001.24

LORKOV, M. M.

"Concerning Wave Depolarization by Strong Fluctuations in Permittivity"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 227-229 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B3)

Translation: The characteristics of the depolarized field are analyzed; a differential equation with fixed coefficients is given which, together with boundary conditions and the condition of radiation, describes the average transverse depolarization field of radiation from an antenna of bounded dimensions in a medium with strong permittivity fluctuations. Bibliography of three titles. Resumé.

1/1

LOBKOV, M. M.

TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SHEVCHENKO

Translated for FSTC by ACSI

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Approved for public release. Distribution unlimited.

172   008

TITLE--PURIFICATION OR ORGANOCHLOROSILANES -U-

AUTHOR-(05)-KLEBANSKIY, A.L., GRUBER, V.N., KRUGLOVA, G.A., KARLIN, A.V.,
    LOBKOV, V.D.

COUNTRY OF INFO--USSR

SOURCE--USSR 265,884

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--17MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ORGANIC SILANE, CHLORINATION, DISTILLATION,
    CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1480   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128879
                        UNCLASSIFIED

2/2   008
CIRC ACCESSION NO--AA0128879
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. ARE PURIFIED BY
CHLORINATION WITH THE AID OF UNSATD. ORGANOCHLOROSILANES, E. G.
METHYLVINYLDICHLOROSILANE, FOLLOWED BY FRACTIONAL DISTN. OF THE FINAL
PRODUCT. THE STILL RESIDUES FROM THE FRACTIONAL DISTN. OF
METHYLVINYLDICHLOROSILANE (CONTG. VINYL GROUPS) CAN BE USED AS THE
CHLORINATING AGENT.

USSR

UDC 669.27'849.051

OPALOVSKIY, A. A., FEDOROV, V. YE., and LOBKOV, YE. U.

"Investigation of the Process of Interaction of Tungsten and Rhenium With Chalcogene"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 86-92 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G171)

Translation: For the selection of regimes for the synthesis of WSe_2, WTe_2, $ReSe_2$, and $ReTe_2$, the nature of metal interaction with chalcogene is studied by the thermographic method. The mixtures W-Se, W-Te, Re-Se, and Re-Te of different composition (ratio of metal: chalcogene 1 : 1; 1 : 1.5, and 1 : 1) are studied. A study is made of the vacuum-thermal decomposition of the selenides and tellurides W and Re, and a study is conducted of the mechanism and kinetics of interaction of these metals with chalcogenes. 1 ill., 2 tables, 18 bibl. entries.   S. Krivonosova

1/1

USSR

LOBKOVA, L. M. and MILYUTIN, YE. R.

"The Effectiveness of Frequency Spacing on Optical Lines of Communication"

Translation: Within the approximation of geometric optics, the authors study the processes associated with the propagation of coherent waves of the optical band in the turbulent troposphere. Expressions are derived for the coefficient of correlation at the point of reception between two fluctuating envelopes of signals differing with respect to frequency. It is shown that if the correlation function of the fluctuations of the refractive index of the troposphere is subjected to the Gauss rule, then the radius of the correlation with respect to frequency depends on the length of the route, scale of turbulence, and the intensity of fluctuation of the refractive index. Original article: three illustrations and three bibliographic entries. Resume.

1/1

- 16 -

LOBKOVA L M

- 488 -

TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. BERTUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

NOTICE

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- 485 -

TECHNICAL TRANSLATION

FSTC-HT-23-2013-72

29 Aug 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SHEVCHENKO

Translated for FSTC by ACSL

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

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Title Page

USSR

LOBKOVA, L. M., IVANOV, V. I.   UDC: 621.396.67.001.24

"Some Results of the Theory of Receiving Antennas"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 4 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 4), Leningrad, 1971, pp 156-159 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B5)

Translation: The field distribution in the focal plane of a receiving antenna is studied on the basis of the theory of linear circuits. It is shown that the resultant field in the focal plane can be determined on the basis of the theorem of convolution. Bibliography of one titles.

1/1

- 7 -

USSR

IL'IN, L. A. and LOBKOVA, N. A., Institute of Mechanics, Academy of Sciences, Ukrainian SSR (Kiev)

UDC 539.3

"Axisymmetric and Antisymmetric Stresses and Deformations in Shells of Revolution With a Meridional Section"

Kiev, Prikladnaya Mekhanika, Vol 9, No 3, Mar 73, pp 43-48

Abstract: In a problem dealing with the axisymmetric and antisymmetric stressed state of thin orthotropic nonhomogeneous shells of revolution, including laminated ones, with an arbitrary configuration of the meridian during mutual shifts (dislocations) of the edges of the meridional section, it is shown that for its solution an effective method may be used, developed for shells enclosed along a parallel, which is based upon the numerical integration, with discrete orthogonalization and normalization, of a resolving system of differential equations that are obtained from the initial equations of the theory of thin shells without any additional simplifications. 8 references. 4 figures.

1/1

USSR

UDC 621.791.75:037-52:62-419.4

TSYGAN, B. G., Engineer, "Pavlogradkhimmash" Works, KAMAKIN, N. I.,
Engineer, SYCHEV, A. A., Engineer, LOBKOVSKAYA, R. M., Engineer,
All-Union Scientific Research, Planning and Technological In-
stitute of Chemical Machinery

"Effectiveness of Using Metal Additions in the Automatic Welding
of Two-Ply Steels"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 72, pp 16-18

Abstract: Results are presented of an experimental investigation
to determine the optimum quantity and granulometric composition
of metal additions, select the most efficient separation of edges,
develop welding methods, and study their effects on the mechanical
properties and the corrosion resistance in automatic welding of
two-ply steel joints. The optimum quantity of metal additions
can be found from an empirical formula. On the basis of investi-
gations and industrial tests, automatic flux welding of two-ply
steel St.3+Kh18N10T (up to 32 mm thick) in two welding operations
using metallic crumb of cut wire was adopted. Bimetal joints
1/2

USSR

TSYGAN, B. G., et al, Svarochnoye Proizvodstvo, No 3, Mar 72, pp 16-18

welded according to the new technology are of high quality. The use of metallic crumb in welding of bimetals increases the welding output without lowering the quality of welds. 4 illustrations, 2 tables, 5 bibliographic references

2/2

- 52 -

USSR

CHEREPENKO, T. I., LOBODA, L. S., SHOKOL, V. A.

UDC 632.95

"Search for Effective Compounds to Control the Powdery Mildews"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active
Materials. Republic Interdepartmental Collection), 1972, No 4, pp 17-19
(from RZh-Khimiya, No 5 (II), 1973, Abstract No 5N617)

Translation: When testing 18 different compounds on the conidia Erysiphe
cichoracearum it was established that the fungicidal activity of PhCh$_2$OOC-
(CH$_2$)$_4$COOH and n-MeC$_6$H$_4$ with SO$_2$N = CClSCl in 0.1% concentration exceeds
the activity of the karatan standard.

1/1

016

TITLE--LABORATORY EVALUATION OF FUNGICIDES AGAINST FLAVIMACEOUS DEHY FUNGI
-U-

AUTHOR--LOBODA, L. S.

COUNTRY OF INFO--USSR

SOURCE--VISN. SIL'S'KOGOSPOD. NAUKI 1970, 13(1), 85-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGICIDE, TEST METHOD, AMMONIUM SULFIDE, SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605002/E02 STEP NO--UR/0534/70/013/001/0085/0089

CIRC ACCESSION NO--AP0139468

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139468   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FUNGISTATIC PROPERTIES OF DINOCAP, KARATHANE, MC 1053, COLLOIDAL S, AMMONIUM POLYSULFIDE, ASPORUM (I), FERBAM (II), AND THIOCINE (III) WERE EVALUATED FOR THEIR EFFECTS ON THE CONIDIA OF ERYSIPHE CICHORACEARUM AND E. COMMUNIS. AMMOUNIUM POLYSULFIDE, I, II, AND III WERE ONLY SLIGHTLY TOXIC TO THE FUNGI.

FACILITY: UKR. NAUK.-DOSLID. INST. ZAKHISTU ROSLIN, KIEV, USSR.

PROCESSING DATE--04DEC70

UNCLASSIFIED

LOBODA, V.M.

machines

STUDY OF COLLISIONS OF MACHINE ELEMENTS ON THE BASIS OF PHENOMENOLOGICAL MODELS OF INELASTIC MEDIA

A. N. Lenskiy, V. M. Loboda and L. P. Fabrika (Dnepropetrovsk)

The experience gained in application of analog models for determination of the force modes of operation of elements of heavy machines in the mining and metallurgical industry is discussed. The general problems involved in the statement and solution of the problem of determining impact parameters (duration, magnitude and force of impact pulse, impact energy, coefficient of restitution), as well as problems of determining the dynamic results of impact loads between the elastic links of machines resulting from impact interaction of masses are presented. A method is described for determining areas of stability of periodic modes of motion of impact and vibration-impact systems using analog models.

A generalized model for substitution of an elementary volume of a medium is suggested. The colliding bodies are considered as consisting of a set of elementary volumes. Each elementary volume and its coupling to neighboring volumes are replaced by a rheological model, the properties of which are determined by the properties of the material of the colliding bodies. Rheological models of viscoelastic, elasto-plastic and viscoelastic-plastic media are studied. It is demonstrated that these models describe the properties of structural materials used in machine building sufficiently completely for purposes of modeling of collisions).

The characteristics of the substitution models are calculated or determined on the basis of results of static and dynamic tests of materials.

The mathematical models suggested describe the collisions of bodies, the period of natural oscillations of which is short in comparison to the duration of the collisions. The use of the models suggested for the study of collisions of machine elements is justified.

Examples are presented of modeling concrete impact and vibration-impact systems: a vertical vibration transporter, an unbalanced rotor, resulting in a bearing without lubrication, and a Geneva mechanism. The results of modeling are compared with precise analytic solutions.

SO: Nauch. Tekh. Inform.
AVTMR TT F Ggy

IN PROBLEM CONCERNING PARTICIPATION OF SH-GROUPS IN THE PROCESSES OF METHEMOGLOBIN FORMATION

Yu. I. Loboda, G. N. Voytenko

Research Institute of Pharmacology and Toxicology, Kiev

Summary

The interrelation between methemoglobin formation in dog blood and changes in the SH-group content of erythrocytes and whole blood as well as the effect of thiol preparations on methemoglobin reduction with nitric and aniline methemoglobinemia were studied. The data obtained testify to the fact that methemoglobin formation with poisoning dogs by sodium nitrite or aniline is accomplished by decrease in the SH-group content of erythrocytes and whole blood. A single subcutaneous administration of cysteamine in combination with poisons in a dose of 0.5 g weakens to some extent the development of methemoglobinaemia but does not prevent from lesion of the enzymic systems containing SH-groups. These results may be a theoretical premise for searching new demethemoglobinemic remedies among compositions containing SH-groups.

1/1

2

USSR

UDC: 669.3.536.425

LOBODYUK, V. A., TKACHUK, V. K. and KHANDROS, L. G., Institute of Physics of Metals

"Martensite Transformation in Thin Films of Copper-Aluminum-Nickel Alloy"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 137-143

Abstract: The growth and substructure formation of the γ' phase elastic crystals in thin films of a copper alloy with 14.1% Al and 5% Ni have been studied. The γ'-phase crystals in thin films are most commonly platetet-shaped, which is, apparently, advantageous for their growth and interaction with the surrounding matrix. There is no crystal growth in sections with a high dislocation density. To generate martensite crystal growth under the influence of stresses, the dislocations must be arranged in specific slip planes rather than chaotically. Ahead of the growing martensite phase crystals one observes a dislocation movement "leading" the trans-formation front which is most likely related to stresses with maximum values at the peak of the martensite crystal. Unlike similar phenomena

1/2

USSR

LOBODYUK, V. A., et al, Fizika metallov i metallovedeniye,
Vol 33, No 1, Jan 72, pp 137-143

observed in twinning, there were ro defects (dislocations or
twins) in the initial β_1 phase near the growing crystals (along
the interphase boundaries). This may be attributed to the fact
the crystal growth occurs in a thin film. 5 illustrations,
10 bibliographic references

Analysis and Testing

USSR   UDC 669.3:535.533.35

LOBODYUK, V. A., TKACHUK, V. K., and KHANDROS, L. G., Institute of Metal
Physics, Academy of Sciences Ukrainian SSR

"Gamma'-Phase Crystal Morphology in a Cu-Al-Ni Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 339-345

Abstract: A copper-base alloy containing 14.1% Al and 5% Ni with and M_{B} point
close to room temperature was investigated with the aid of an electron micro-
scope. It was found that the martensite crystals consist of two parts found
in a twinned interrelationship where the twinning plane was (121) for the
gamma'-phase. The crystal structure (thin twins, stacking faults) form
simultaneously with the crystal formation. Between the $beta_1$ - gamma' phase
the following orientation relationship can be observed: $(101)_{\beta_1}//(001)_{\gamma'}$;
$[010]_{\beta_1}//[010]_{\gamma'}$. Seven figures, 9 bibliographic references.

1/1

UDC 539.389.2:669.15

USSR

DONUKIS, T. L., LOBODYUK, V. A., SAVVAKIN, G. I., TITOV, P. V.,
FEDAS, N. P., and KHANDROS, L. G., Institute of Metal Physics,
Academy of Sciences Ukr SSR

"The Effect of Shock Loading on the Structure and Properties of
Fe - Ni Alloys"

Kiev, Metallofizika, No. 32, 1970, pp 88-94

Translation: The structure and properties of Fe - 30% Ni and
Fe - 32% Ni alloys after the passage of shock waves of 100 and
300 kbar were studied. The loading was made by a shock of a
steel plate. The time of the effect of high pressure was 1.4
microseconds. A shock wave of 300 kbar induces an almost full
$\alpha \to \gamma$ transformation. A needle structure unusual for aus-
tenite, twins, and a cellular dislocation structure were observed
in the γ-phase formed.

        After the $\alpha \to \gamma$ transformation induced by the passage of
a shock wave, hardness reached 270 Hv, and the γ-phase hardened
by shock loading had a hardness of 220 Hv. The recovery of the
1/2

USSR

DONUKIS, T. L., et al., Metallofizika, No 32, 1970, pp 88-94

γ-phase formed as a result of the $\alpha \rightarrow \gamma$ transformation under the effect of shock loading began at 200°C below the recovery temperature of 70% deformed austenite.

2/2

1/2   013   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF ZINC CONTENT ON THE TENDENCY OF BRASS TOWARDS CORROSION
   CRACKING -U-
AUTHOR-(03)-GLIKMAN, L.A., LOBOV, A.F., RUDIN, L.YE.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 109-110

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BRASS, SOLID SOLUTION, CORROSION CRACKING, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0222   STEP NO--UR/0369/70/006/001/0109/0110

CIRC ACCESSION NO--AP0129478
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0129478   PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TENDENCY OF VARIOUS TYPES OF
BRASS TOWARDS CORROSION CRACKING WAS STUDIED AS A FUNCTION OF ZN
CONTENT. SOME REFINEMENTS WERE ACCORDINGLY INTRODUCED INTO THE EXISTING
VIEWS, I.E. THAT INCREASING ZN CONTENT LEADS TO INCREASED CORROSION
CRACKING. THIS IS IN FACT ONLY VALID FOR ALPHA AND BETA BRASSES. IN
BRASSES RICHER IN ZN, PARTICULARLY THOSE WITH THE STRUCTURE OF THE GAMMA
SOLID SOLUTION, THE TENDENCY TOWARDS CORROSION CRACKING IS GREATLY
REDUCED. IN PURE AN THE TNEDNENCY VANISHES ENTIRELY.

USSR

RUTKOVSKIY, I. V., LOBOV, A. I.

"Device for Continuous Recording of Bioelectric Potentials of
Plants Under Field Conditions"

Kishinev, Elektronnaya Obrabotka Materialov, No 4, 1970, pp 81-86

Abstract: A device suggested for recording of bioelectric poten-
tials of plants under field conditions is described, and a photo-
graph and schematic diagram are presented. Since dc amplifiers
with direct coupling between stages have considerable zero drift,
the device uses modulation, amplification and subsequent demodula-
tion of the measured signal. The modulator consists of a polar-
ized relay. Temperature stabilization is assured by the use of
dividers in the base and emitter circuits. The conversion fre-
quency is about 100 Hz. The sensitivity of the device varies
between 1 mv and 1.3 v, in seven scale ranges.

1/1

1/2   011   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EXPERIMENTAL VERIFICATION OF RENORMALIZABLE THEORIES OF WEAK
INTERACTION IN EP SCATTERING PROCESSES -U-
AUTHOR-(02)-LOBOV, G.A., SHABALIN, YE.P.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 1125-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WEAK NUCLEAR INTERACTION, NUCLEAR SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0590   STEP NO--UR/0367/70/011/005/1125/1127

CIRC ACCESSION NO--AP0137675
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0137675

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRADITIONAL THEORETICAL SCHEMES
CONCERNING WEAK INTERACTIONS ORIGINATING IN THE STUDY OF HIGHER ORDER
PROCESSES OR IN TRANSITIONS TO HIGH ENERGY LIMITS INVOLVED IN SCATTERING
PROCESSES HAVE PRESENTED SOME DIFFICULTIES.   RENORMALIZABLE THEORIES
FOR THE EP SCATTERING PROCESS ARE DISCUSSED.   FACILITY: INST.
TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Recorders and Transducers

USSR

UDC 537.311.33

LOBOV, G.D., NENASHEV, A.N.

"Recording Of Submillimeter And Infrared Radiation With The Aid Of The Tunnelling Junction Metal--Insulator--Metal"

Translation: An analytical expression is derived for the tunnel current flowing in a metal--insulator--metal system across a potential barrier of arbitrary form in a regime of small biases. A computation is made of the forces of the mirror image and the thermionic emission across the barrier, and experiments are conducted with point contacts for determination of the time constant of transition of the RC-network of a pulse being detected. As a source of microwave oscillations a klystron in the 5-mm range and a CO_2 laser with AM radiation were used. The dependence was measured of the magnitude and form of the pulses detected on the thickness of the dielectric film. Tungsten wires 15 micron in diameter were placed in contact with an Al_2O_3 layer grown in natural condition on an Al electrode. 2 ill. V.K.

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USSR

UDC 621.375.82

LOBOV, G. D., SHTYKOV, V. V., and GRATSIANSKAYA, Ye. I.

"On the Possibility of Using the Magnetic Moment of the Electrons of a Semiconductor Plasma to Record CO_2-Laser Emission"

Translation: Formulas are obtained for the magnetization caused by the electrons in the conduction band of a semiconductor cylinder situated in a magnetic field. It is shown that it is possible to record the radiation passing through the semiconductor by measurement of the variable magnetization component. Estimates are given of the voltage appearing on the terminals of the induction coil surrounding the cylinder, as well as of the magnetic field intensity necessary for the case of the passage of CO_2-laser radiation ($\lambda = 10.6$ microns) through InSb, HgTe, and $Cd_xHg_{1-x}Te$.

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USSR

UDC $621.373.029.7.001.5$

LOBOV, G.D., SHTYKOV, V.V., BOGETKIN, V.I., DRUGOV, L.V.

"Possible Mechanism Of Discharge Current Change In CO_2 Affected By Laser Radiation"

Abstract: One of the possible mechanisms is considered for change of the discharge current in carbon dioxide gas affected by the radiation of a CO_2 laser. The theoretical results are found in satisfactory agreement with experimental data. In the experiments particular attention was paid to the effect of radiation on the discharge current in CO_2 during irradiation of its cathode region by a fine laser beam. A theoretical and experimental estimation was also made of the efficiency of conversion of a detector of infrared radiation, using a change of discharge current. It is possible that the results obtained in this work can be useful during study of the processes in the gaseous medium of CO_2 amplifiers and generators, and also during use of the change of the discharge current for registering the radiation of a CO_2 laser. The authors thank E.S. Shiteman for participation in the conduct of the experiments. 5 fig. 9 ref. Received by editors, 12 April 1971.

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USSR

UDC: 621.396.69:621.319.4

ASEYEV, Yu. N., KRYACHKO, V. V., LOBOV, I. Ye., SYNOROV, V. F., KOSOY, A. Ya.

"A Thin-Film Capacitor"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329582, Division G, filed 17 Oct 69, published 9 Feb 72, p 205

Translation: This Author's Certificate introduces a thin-film capacitor in the form of metal plates (e. g. comb plates) applied to a dielectric substrate and covered with a layer of dielectric material. As a distinguishing feature of the patent, the capacitance is increased without increasing the area of the plates by applying a layer of metal to the dielectric.

1/1

USSR

UDC 681.325.5(047.1)

LOBOV, O. F.

"Methods and Apparatus for Accelerating Arithmetic Operations in Digital Computers"

Penza, V. Sb. Razrabotka i Primeneniye Sredstv Vychisl. i Inform. Tekhn. Uch. Zap. Penz. Politekhn. In-ta (Development and Application of Resources for Computer and Information Technology -- Collection of Works. Educational Notes of Penza Polytechnical Institute), Vyp 1, 1970, pp 60-69 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B285, by B. K.)

Translation: Methods which accelerate arithmetic operations in digital computers by the use of special computation algorithms and which reduce the time needed for each addition are briefly reviewed. A logic procedure for accelerating carry initiating signals is examined in detail; the carry circuits in the accumulator that are associated with this procedure are constructed from the ordinary elements of the computer. Expressions for the optimal lengths of groups of digits at each by-pass stage are derived, and the length of propagation of the carry initiating signal for the accumulator,

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USSR

LOBOV, O. F., V. Sb. Razrabotka i Primeneniye Sredstv Vychisl. i Inform.
Tekhn. Uch. Zap. Penz. Politekhn. In-ta (Development and Application of
Resources for Computer and Information Technology -- Collection of Works.
Educational Notes of Penza Polytechnical Institute), Vyp 1, 1970, pp 60-69
(from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya
Tekhnika, No 8, 1971, Abstract No 8B285, by B. K.)

which depends on the number of such stages, is determined. It is noted that
construction of circuits with more than two stages is inadvisable. An
example of the construction of an accumulator made from Ural-10 modules is
cited. The accumulator is designed for 54-bit numbers, and it allows a
carry of approximately one microsecond in duration. 2 illustrations.

2/2

USSR

UDC: 621.3.049.75:774

PASTUKHOV, V. M., LOBOV, V. I., LUTCHENKOV, A. M., CHUMAKOV, Ye. A., SIYANOV, S.A., SHEKHODANOV, M. P., LESKOVSKAYA, N. P., Scientific Research Institute of Technology and Production Organization"

"A Device for Combining Solid Circuits or Semiconductor Devices with Phototemplates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, pp 51-52, patent No 259975, filed 19 Nov 66

Abstract: This Author's Certificate introduces a device for combining solid circuits or semiconductor devices with phototemplates and exposing the resultant combination. The device contains a table for combining the solid-state circuit with the phototemplate, an illuminator, power supply, control unit and enclosure. As a distinguishing feature of the patent, precision of registration is improved by fitting the combining table with a hemispherical suction device fastened on a rotating column and connected through a piston rod, movable sleeve, cylinder, support bracket and moving carriage in prismatic guides to a fixed plate to which the phototemplate is fastened.

1/1

USSR

UDC 621.385.735

LOZOVA, S.V., KHODNEVICH, S.P.

"Oxide Cathodes With Dense Covering Based On A Polymeric Binder"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 8, pp 131-138 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A91)

Translation: Experience is generalized with respect to the development of the technology for deposition of dense oxide coverings with a binder based on polybutylmethacrylate, and the properties of cathodes with such a covering are investigated. As a result of the comparison conducted of oxide cathodes with a dense (2.8--3 g/cm^3) covering, deposited with the use of various binders (colloxylin and copolymer of butylmethacrylate with acrylic or methacrylic acid), it was shown that a nontoxic, non-explosive polymeric binder assures the preparation of durable and stable suspensions for spraying, high elasticity of the covering which makes it possible to perform its mechanical processing, good adhesion of the covering to the core right up to the temperature of the beginning of decomposition of the carbonates, absence of liberation of the gases NO, NO_2 in the process of thermal processing, and absence of carbon residues in the covering after decomposition of the binder. In addition, use of the polymeric binder simplifies the process of preparation of the binder because of the reduction of the number and duration of the operations, while the viscosity of the prepared binder does not change during storage over the course of a year. 4 ill. 16 ref. G.B.

1/1

LOBOVA, L. K.

GENEALOGICAL STUDIES RELATED TO SCHIZOPHRENIA

UDC: 616.895.8-056.74

Extensive investigations of recent years have confirmed the previously known fact that there is definite accumulation of pathology in the families of schizophrenics. The studies of Rosenthal, Katy, Wender, Heston, and others, based on representative material, revealed that "disorders in the schizophrenic spectrum" (Rosenthal) are encountered more often, with statistical reliability, in the blood relations of a proband as compared to the total population. However, practice has shown that discrete forms of psychoses and different types of borderline states, as well as marked personality anomalies may be detected, described, and classified only if the physician makes a complete examination of the probands and their immediate relatives. Therefore, a meticulous clinical description of the probands and their immediate relatives should be the basis of a genealogical study which is the first stage of genetic analysis.

The present study is based on observations made in the Genetic Group of the Institute of Psychiatry, USSR AMS [Academy of Medical Sciences] in 1965-1969. The genealogical method was used to study 270 families of patients with different forms (continuous, sporadic processual, and periodic) of schizophrenia.

We did not make the traditional division of probands into Kraepelin's types, since such division is based on static syndromal evaluation, in which the leading syndrome at the time the patient is examined is used as the base. This does not take into consideration the course of the disease as a whole. Studies pursued at the Institute of Psychiatry, USSR AMS, for a number of years revealed that such a basic parameter as course is the closest to the biological essence of the process.

The classification of schizophrenia according to type of course, which has been adopted at the Institute of Psychiatry, USSR AMS, is quite consistent with the division of endogenous psychoses established in psychiatry (Table 1).

Powder Metallurgy

LOBOVA, T. A., KALIKHMAN, V. L., ZELIKMAN, A. N., and PRAVOVEROVA, L. L.,
Moscow Institute of Steel and Alloys

"Conducting Solid Lubricant"

Translation of Abstract: The inventors suggest a high-efficiency antifriction
lubricant containing Nb or Ta diselenide in the form of a solid solution in W
or Mo diselenide. The lubricant is composed of 0.5-30 mol.% $NbSe_2$ or $TaSe_2$
and 99.5-70% $MoSe_2$ or WSe_2. The lubricant has high moisture resistance.
Electrical and antifriction properties of the lubricants are presented. One
table.

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USSR   UDC 669.27'294.051

ZELIKMAN, A. N., KREYN, O. YE. and LOBOVA, T. A.

"Synthesis and Some Properties of Tungsten and Tantalum Chalcogenides"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 61-76 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G170)

Translation: Scientific research work is carried out regarding the conditions of production of WS_2, W, and Ta diselenides and the chemical and antifriction properties of these compounds. A study is made of the interaction of selenides with water and diluted acid and alkali solutions at room temperature, and its behavior during air oxidation at 300-800°. It is established that the WS_2 friction coefficient coincides with that of MoS_2, but its wear is half as much. 7 ill., 3 tables, 7 bibl. entries.   S. Krivonosova

1/1

GORLIN, A. M., LOBOVSKIY, A. Ye.

"Redundancy of Equipment for Automated Control Systems"

Translation: A method is considered for determining the economically advisable volume of reserve equipment for an automated control system, as well as the spatial arrangement of the points of location themselves. The proposed method and a program developed for the "Minsk-22" computer can be used to solve practical problems involved in the optimum planning of reserve equipment in industrial enterprises. Authors' abstract.

1/1

Hydrobiology

USSR

UDC 619:639.31.7

LOBUNTSOV, K. A., Candidate of Veterinary Sciences, All Union Institute of Experimental Veterinary Medicine

"Characteristics of Bacteria Which Are Pathogenic for Fish"

Moscow, Veterinariya, No 8, Aug 70, pp 111-112

Abstract: The properties of the five most important bacteria which are pathogenic for fish are reviewed. Aeromonas punctata causes abdominal edema in carp, eels, and pike. It is a short, monotrichous, motile, gram-negative bacillus occurring singly or in pairs; it forms neither spores nor capsules and grows readily in meat peptone media at 20-25°C, pH 7.2-7.4, under aerobic and anaerobic conditions. Aeromonas salmonicida causes furunculosis in salmon-type fishes. It is a short, nonmotile, gram-negative, facultative anaerobe which grows best at 20-25°C. Pseudomonas fluorescens causes fluorescent ulcers on the skin of various fish; the granulata variety differs from the typical in its ability to coagulate milk. Pseudomonas putida causes abdominal edema in carp. It is a gram-negative, motile bacillus with two to four flagellae; it forms no spores and grows in the usual media at an optimum temperature of 25°C. Vibrio anguillarum causes abdominal and salt-water plague in eels in the Baltic Sea, as well as skin ulcers in fish in the Caspian Sea. It is a comma-shaped, gram-negative, facultative anaerobe;
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USSR

LOBUNTSOV, K. A., et al, Veterinariya, No 8, Aug 70, pp 111-112

it forms neither spores nor capsules and readily grows in peptone media contain-
ing 1-7% sodium chloride. These bacteria may also be found in the intestines and
internal organs of apparently healthy fish specimens. Since fish may carry micro-
organisms pathogenic to warm-blooded animals and to man, comprehensive examina-
tion of fish samples must be performed.

2/2

UNCLASSIFIED   PROCESSING DATE--09OCT70

TITLE--THE DESIGN OF THE CONTROL SYSTEM SPACECRAFT STABILISATION WITH
HUMAN OPERATOR -U-

AUTHOR-(05)-SOLODOVNIKOV, V.V., DMITRIEV, A.N., SEMENOV, V.V., ARUTUINOV,
S.K., LOBUSOV, E.S.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR 2-6, 1970, PAPER, 18

DATE PUBLISHED----MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--MAN, MAN MACHINE SYSTEM, MANUAL, SPACECRAFT RENDEZVOUS, ORBIT
CORRECTION, SPACECRAFT LANDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0006   STEP NO--FR/0000/70/000/000/0018/0018

IRC ACCESSION NO--AT0117306

UNCLASSIFIED

RC ACCESSION NO--AT0117306
STRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE ACTIVE ROLE
OF MAN IN SOLVING NUMEROUS SPACE PROBLEMS SUCH AS RENDEZVOUS, MIDCOURSE
CORRECTION, LANDING, ETC. ALL THESE OPERATIONS INCLUDE MANUAL
SPACECRAFT STABILIZATION. BECAUSE OF THEIR GREAT IMPORTANCE,
ANALYTICAL DESIGN IS NECESSARY. ATTENTION IS GIVEN TO THE DYNAMIC AND
INFORMATION RESEARCH OF HUMAN OPERATOR FEATURES. THE MAJOR REASON FOR
MANUAL TRACKING IS THE NECESSITY FOR CONSTANCY OF INFORMATION
TRANSMISSION RATE. THE CORRELATION BETWEEN RANDOM DELAY TIME AND INPUT
PROVIDED AN OPPORTUNITY TO OBTAIN A STOCHASTIC DYNAMIC MODEL OF THE
OPERATOR.

UNCLASSIFIED

USSR

POPOV, A. K., VOLKOV, A. M., ARUTYUNOV, S. K., and LOBUSOV, Ye. S., Institute of Biomedical Problems, Ministry of Public Health USSR, Moscow Aviation Institute imeni S. Ordzhonikidze, and Moscow Higher Engineering Technical School imeni N. E. Bauman

"Mechanisms of Spontaneous Rhythmic Activity of the Cerebral Cortex"

Abstract: A discussion is presented of possible models in which stimulation of the cortex evokes depolarization of dendrites and excitation of internuncial neurons, which in turn show an inhibiting effect followed by hyperpolarization of dendrites. The process represents the beginning of rhythmic activity. It is assumed that the spontaneous rhythmicity of the isolated cortex is the result of bioelectrical sequential changes in the types of interactions between the dendrites and the internuncial neurons. In other words, the possibility of cortical rhythm exists because of the structural connections of the elements composing it. Thus, the systems and the subsystems interact. On the basis of analysis and the results of the modeling procedures, it is assumed that the spontaneous rhythmic activity of the nerve structures of the cortex is ensured
1/2

USSR

by a mechanism of strict sequential change in the types of interactions of the form

$$A \overset{+}{\underset{+}{\rightleftarrows}} B \rightarrow A \overset{-}{\underset{+}{\rightleftarrows}} B \rightarrow A \overset{-}{\underset{-}{\rightleftarrows}} B \rightarrow A \overset{+}{\underset{-}{\rightleftarrows}} B \text{ и т. д.,}$$
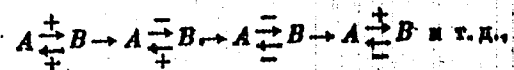
where A and B are mutually interacting subsystems.

2/2

USSR   UDC: 539.4:624.011

YAKOVLEV, Yu. S., LOBYSEV, V. L.

"Interaction Between a Seismic Wave and a Structure"

Tr. Vses. proyektno-izyskat. i NII "Gidroproyekt" (Works of the All-Union Institute of Preliminary Study and Design, and of Scientific Research in the Planning of Hydraulic Structures), 1971, sb. 20, pp 87-93 (from RZh--Mekhanika, No 7, Jul 71, Abstract No 7V870)

Translation: The paper deals with the two-dimensional problem of interaction between a body and a seismic wave. It is assumed that the seismic wave is given in the form of a vector field of displacements of the points of the free surface. The equation of motion in Laplace transforms is written out on the basis of known results. The transition to the originals is accomplished by the method of asymptotically equivalent functions. An approximate scheme is given to account for the elastic properties of a monolithic body in evaluating the reaction of the medium. Authors' abstract.

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USSR

LOBYSEV, V. L., YAKOVLEV, YU. S.

UDC 517.9:539.2

"The Method of Asymptotically Equivalent Functions and Its Application to the Solution of Certain Problems in the Mechanics of Continuous Media"

Leningrad, V sb. Probl. mekhan. tverd. deformir. tela (Problems in the Mechanics of a Solid Deformable Body -- collection of works), "Sudostroyeniye," 1970, pp 239-250 (from RZh-Matematika, No 7, Jul 1970, Abstract No 7B462)

Translation: An approximation method is derived for transformation from transforms to originals in integral Laplace transformation. It is proved that a solution may be constructed with any predetermined degree of accuracy. Rules are formulated for selecting the zero and succeeding approximations. The method is illustrated by various examples of solving problems in the theory of elasticity. Authors' abstract.

1/1

USSR

UDC 662.611

AKHMEDOV, D. B., LOBYSHEV, V. A., POMERANTSEV, V. V.

"Investigation of the Flame-Propagation Equations and Determination of the Total Kinetic Combustion Constants"

Trudy Leningradskogo Politekhnicheskogo Instituta ("Works of the Leningrad Polytechnical Institute), No 316, 1970, pp 89-95 (From Referativnyy Zhurnal, Teploenergetika, No 1, 1971, Abstract No 1R42)

Translation: Calculation expressions are obtained for the determination of basic combustion characteristics. The formula for determining the relationship of the rate of flame propagation to the conditions of heat removal agrees well with the formula for determination of the critical conditions of flame propagation. On the basis of this formula, a correction may be introduced for nonadiabaticity of the process when investigating the values of the total kinetic combustion constants. When experimentally determined values of the normal flame-propagation rate are used, a formula is proposed for determining the total kinetic combustion constants. 3 figures, 2 tables. 7 bibliographic entries.

1/1

USSR

KOMAROV, M. A., Engineer, GITARSKIY, L. S., Engineer, LOBZHANIDZE, A. V., Engineer, and SMETANNIKOV, Y. V., Engineer

"Properties of Welded Joints of Aluminum-Beryllium Alloy"

Abstract: Properties of welded joints of No 1, No 2, Be-31Al, Be-41Al, and Be-38Al Al-Be-alloys (0.8-3.0 mm thick sheets) welded by the argon-arc and electron beam methods, were experimentally investigated. The results are discussed by reference to graphs showing the diagram of state of Al-Be and effect of welding rate on mechanical properties of argon-arc welded joints of 2.0-mm-thick sheets and their microstructures. The experiments demonstrated that high quality welds on sheets of Al-Be alloys can be obtained by d.c. argon-arc welding of direct polarity in a chamber with controllable atmosphere. A redistribution of the Be-component in the thermal influence zone and the seam metal takes place, influenced by the Al-Be welding thermal cycle. The strength of Ar-arc welded joints was found to be 34 kg/mm^2; their plasticity and ductility characteristics exceeded the characteristics of the initial metal. In order to obtain a quality weld by the electron-beam method, the welding must be performed in two operations (with a sharp beam and with a 1/2

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USSR

KOMAROV, M. A., et al., Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

defocused beam), but   the properties of such joints are lower than the
properties obtained by Ar-arc welding. Five illustrations, three
tables, six bibliographic references.

2/2

LOBZHANIDZE, Sh. S., ZEDGINIDZE, I. G.

"Certain Specific Plans for Studying the Properties of Mixtures"

Tr. XV Nauchno-tekhn. Konferentsii Prof.-prepodavat. Sostava i Nauchn. Rabotn. Probl. i Otrasl. Labor. Gruz. Politekhn. In-t. Vyp. 17 [Works of 15th Scientific and Technical Conference of Teaching Staff and Scientific Workers from Problems Laboratory Branch of Georgian Polytechnical Institute, No 17], Tbilisi, 1970, pp 64-68, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V179 by V. Granovskiy).

Translation: The problem of planning regression experiments in study of the properties of mixtures depending only on the concentration of mixture components is studied. As we know, the factor space in this case is a $(p - 1)$-dimensional simplex $x_1 + x_2 + \ldots + x_p = 1$, each point of which corresponds to a definite mixture. There are various experimental plans for estimation of the coefficients of the polynomial describing the properties of the mixture. All of these plans contain a certain number of points on the faces of the simplex. Since each such point corresponds to a mixture containing certain components with zero proportions, at these points the properties of the mixture are not fully manifested. This work studies plans for second order polynomial regression containing points with nonzero proportions x_i of all p components.

1/1

USSR

UDC 681.325.54

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

"Optical Signal Adder"

Translation: An optical signal adder for signals given in the form of pictures of rectangular shape is introduced. The adder contains an optical interferometer. It is distinguished by the fact that in order to improve the light efficiency and insure addition with respect to any modulus, the expanding system for conversion of the light pictures to a quadratic matrix is located at its input, after which along the channels corresponding to the components there are a Dove prism and a system of rhombic prisms with sequentially decreasing height the number of which per unit is less than the summation modulus. At the output of the indicated channels there is an interference mixer followed by the compressing system.
1/1

Therapy

USSR   UDC 616.988.2-08

LOBZIN, V. S., and SICHKO, ZH. V.

"Use of New Antiviral Preparations, Nucleases, for Neuroviral Infections"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 8, 1973, pp 47-60

Abstract: Nucleases (RNAse and DNAse) obtained mostly from cattle pancreas
were demonstrated in clinical trials to be highly efficacious in the treat-
ment of various forms of meningitis, meningoencephalitis, radiculoneuritis,
radiculoganglionitis, etc. They inhibit the replication of several pathogenic
viruses by depolymerizing their nucleic acids without injuring the host's nucleic
acids. Depending on the microstructure of the viruses, ribonuclease is used
in the treatment of diseases caused by RNA viruses (causative agents of mumps,
influenze, tickborne encephalitis, equine encephalomyelitis), while dexo-
syribonuclease is prescribed for diseases caused by DNA viruses (adenoviruses,
causative agents of shingles, smallpox, etc.). Desensitizing drugs must be
used in conjunction with the nucleases.

1/1

USSR   UDC 616.8-02:612.766.2

PANOV, A. G., LOBZIN, V. S., and MIKhAYLENKO, A. A., Military-Medical Academy
imeni Kirov, Leningrad

"Neurological Manifestations of Prolonged Hypodynamia"

Abstract: Neurological and muscular reactions were studied in 22 healthy young
persons during 70 to 100 days of continuous bedrest. The neurological dis-
turbances developed in a definite sequence. The first 7 to 10 days were marked
by adaptive reactions; the subjects complained of muscular pain, headache,
hyperhidrosis, and mild insomnia. There was some dissociation between subjec-
tive and objective symptoms during the next 20 days. While the number of com-
plaints diminished and sense of well-being improved, insomnia worsened, muscu-
lar hypotonia and hypotrophy progressed, and strength decreased. Symptoms of
oral automatism and nystagmoid twitching of the eyeballs appeared. About the
8th week the initial neurological manifestations of hypodynamia intensified and
some new ones developed, e.g., irascibility, anorexia, apathy, and aggressive-
ness. The diverse neurological reactions comprised three clinical syndromes:
asthenoneurotic, peripheral nervous-muscular, and interhemisphere pyramidal
asymmetry.
1/1

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USSR

UDC 616.981.553

AKIMOV, G. A., LOBZIN, V. S., GAREMIN, Ye. M., ZHUK, L. N., and ZUBIK, T. M., Chair of Nervous and Infectious Diseases, Military Medical Academy imeni Kirov, Leningrad

"Data on the Diagnosis and Pathogenesis of Botulism"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,033-1,038

Abstract: Observation of six patients with botulism showed that gastro-intestinal disorders developed in only three of them; three patients exhibited only disturbances of the nervous system expressed primarily in oculomotor and bulbar disorders. In order to investigate changes in the nervous system during botulism, 24 dogs were given intramuscular injections of botulinus toxin type A in a dose of 2,500 MLD for mice per kg. Various branches of the nervous system of 12 of the dogs were subjected to a pathohistological exami-nation after the dogs were sacrificed on the 3d to 12th day after administra-tion of the toxin. No signs of selective action of the toxin on the central motor structures were detected. There was evidently selective action on peripheral motor neurons. Correlation of clinical and morphological data in-dicated that the determining factor in the pathogenesis of paralytic syndromes

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USSR

AKIMOV, G. A., et al, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Kor-
sakova, Vol 71, No 7, 1971, pp 1,033-1,038

was disturbance of neuromuscular transmission. All branches of the nervous
system were involved in the pathological process, but the morphological
changes in the nervous system, which were of the type of an acute swelling,
were generally reversible. Although slow recovery of the dogs that had not
been sacrificed began on the 10th - 12th day after administration of the toxin,
muscular weakness persisted for one month. The most active systems with the
highest metabolism (the oculomotor apparatus and the bulbar system) were
apparently affected first, but they also recovered fastest.

2/2

1/2   025   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ABSORPTION OF RADIATION BY LOCALLY EXCITED CHARGE CARRIERS -U-

AUTHOR-(03)-ABANSHIN, N.P., BILENKO, D.I., LODGAUZ, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 133-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON HOLE, CARRIER DENSITY, PARTICLE DISTRIBUTION,
ELECTROMAGNETIC WAVE ABSORPTION, EXCITED ELECTRON STATE, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1215   STEP NO--UR/0139/70/013/003/0133/0135

CIRC ACCESSION NO--AP0124869
UNCLASSIFIED

CIRC ACCESSICN NO--AP0124869

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS WERE DEVELOPED FOR
CALCG. THE AV. CONCN. OF EXCESS HOLES, DELTA BAR P, THE DISTRIBUTION
WAS PLOTTED OF DELTA BAR P FOR DIFFERENT RATIOS OF THE RADIUS, R, OF THE
EXCITING SPOT AND THE DIFFUSION LENGTH. FROM THE PROPORTIONALITY OF THE
ABSORPTION COEFF., K, AND THE CONCN. OF CARRIER CHANGES, DELTA K EQUALS
SIGMA DELTA BAR P, THE ABSORPTION OF NONEQUIL. CARRIER CHARGES WAS
CALCD. FOR DIFFERENT POSITIONS AND CONFIGURATIONS OF THE SPOT; SIGMA IS
THE CROSS SECTION OF ABSORBED RADIATION. FOR DELTA KD IS SIMILAR TO 1,
K SUBO D IS SIMILAR TO 1, WERE D IS THE THICKNESS OF THE ABSORBING LAYER
AND K SUBO IS K FOR EQUIL. CHARGE CARRIERS, IN(T-T SUBO) EQUALS MINUS
SIGMA D DELTA BAR P AND FOR DELTA KD IS SIMILAR TO 1, K SUBO D SMALLER
THAN 1, IN(T-T SUBO) EQUALS IN(1 MINUS R PRIME2) MINUS SIGMA D DELTA BAR
P, WHERE T SUBO AND T IS RADIATION PASSED UP TO AND AT EXCITATION, RESP.
     FACILITY: SARATOV. GOSUNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

96046e Polarographic study of unsaturated ketones with sub-
stituents. Polynuclear aromatic systems. Kotok, L. A.;
Bezuglyi, V. D.; Lodygin, I. A.; Kononenko, L. V. (USSR).
Zh. Obshch. Khim. 1970, 40(1), 22-5 (Russ). Polarographic
data on half-wave potentials are presented tabularly and graphi-
cally for ArCH:CHCOAr' where Ar were selected from 2-fluor-
enyl, Ph, 1-C₁₉H₇, 2-C₁₀H₇ or p-PhC₆H₄, and Ar' was selected
from Ph, 1-C₁₁H₇, 9-anthryl, 2-fluorenyl, or p-PhC₆H₄ groups.
Introduction of polycyclic substituents into the chalcones raised
the polarographic activity of these and it was shown that the pri-
mary redn. reaction involves the participation of the unsatd.
ketone carbonyl groups.   G. M. Kosolapoff

LB

REEL/FRAME
19801720

7

Luminescense

USSR   UDC 661.143:546.431'821'185(088.8)

GUGEL', B. M., LODYGIN, N. A., GOLUBEV, I. F., KHIZHA, V. S., BLYAKHMAN,
E. A., KUTSENKO, N. A., SIDOROV, M. D., ZVYAGIN, V. B., VAKHRAMOV, V. P.,
AGAPOV, V. I., GARKUSHA, V. A., KHUSAINOVA, R. S.

"Phosphor for Low-Pressure Luminescent Tubes"

USSR Author's Certificate No 336342, filed 19 May 70, published 22 May 72
(from RZh-Khimiya, No 2(II), Feb 73, Abstract No 2L148P)

Translation: In order to increase the light yield of the tubes, the proposed
phosphor includes the following: barium-titanium phosphate, calcium halo-
phosphate, strontium and magnesium orthophosphate and magnesium fluorogerman-
ate. The barium-titanium phosphate, the calcium halophosphate, the strontium
orthophosphate, magnesium orthophosphate and magnesium fluorogermanate are
introduced in the following proportions by weight: 4-6:2.5-4:0.4-0.8:0.13-0.25
respectively. As an example, let us take weighed samples of 4.36 kg of barium-
titanium phosphate, 3.84 kg of calcium halophosphate, 0.40 kg of magnesium-
strontium orthophosphate and 0.24 kg of magnesium fluorogermanate. Put them
in a porecelain cylinder and mix for 1 hour. A suspension is prepared from
the mixture obtained and it is applied to the tubes.

1/1

USSR   UDC 629.78.018.1

ARDASHEVA, M. M., IL'INA, S. A., LODYGIN, N. A., MAYKAPAR, G. I.,
PERVUSHIN, G. Ye., TOLMACHEVA, K. F.

"Use of Fusible Temperature Indicators to Measure Heat Fluxes to Models in
Wind Tunnels"

Translation: Temperature-indicating countings are widely used in studying
heat transfer in aerodynamic experiments. A method is described for study-
ing fusible heat indicators which allows the temperature and temperature in-
terval of melting of the temperature indicators to be determined as a func-
tion of pressure and heating rate. The rate of sublimation of the tempera-
ture indicators is determined at various pressures. The use of this method
has allowed the All-Union Scientific Research Institute of Luminophors and
high-purity substances to develop fusible temperature indicators suitable
for investigation of heat transfer to flight vehicle models. Model photo-
graphs produced in various wind tunnels are presented as examples. 7 Figures;
1 Table; 4 Biblio. Refs.

1/1

USSR   UDC 616.981.48-022.38-036.22

MATSIYEVSKIY, V. A., LOGACHEV, A. V., FEDORINA, A. P., and PISKLOVA, A. S.,
Ivano-Frankovsk Medical Institute and Ivano-Frankovskaya Oblast Sanitary-
Epidemiological Station

"An Outbreak of Food Poisoning Caused by E. coli 0124:K72 (B17)"

Abstract: An acute dysentery-like disease broke out among children and adult
attendants in a children's sanatorium. The disease, caused by E. coli
0124:K72(B17), was characterized by an explosive onset, elevated temperature,
gastrointestinal disturbances (abdominal pain, liquid stools sometimes admixed
with mucus and blood), and brief course. All the cultures isolated from the
patients produced a positive methyl red reaction and a negative Foges-Proskauer
reaction. They were lacking in fibrinolytic and plasma-coagulating or hemolytic
properties. All were sensitive to standard colicins but insensitive to
penicillin and furacillin. They formed indole and hydrogen sulfide and
fermented glucose, mannite, maltose, arabinose, xylose, sorbito, dulcite,
glycerine, lactose, and rhamnose with the formation of gas and acid. However,
they did not ferment sucrose, inosital, salicin, urea, or milk.
1/1

- 19 -

1/2   028   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--GENETIC PROBLEMS IN ORTHOPAEDICS -U-

AUTHOR-(02)-KORZSH, A.A., LOGACHEV, K.D.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 1-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HUMAN GENETICS, RADIOLOGY, BIOCHEMISTRY, CHROMOSOME,
DIAGNOSTIC METHODS, MUSCULOSKELETAL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0966   STEP NO--UR/9115/70/000/004/0001/0008

CIRC ACCESSION NO--AP0109123
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0109123

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT A CRITICAL
REVIEW OF THE STATE OF CLINICAL GENETICS OF DISEASES OF THE
WEIGHTBEARING LOCOMOTOR APPARATUS. POINTING TO THE ABSENCE OF DEVELOPED
GENETIC ORIENTATION IN HOME ORTHOPAEDICS, THEY OUTLINE THE LEADING
PROBLEMS FOR STUDY, EMPHASIZING THE IMPORTANCE OF INVESTIGATION OF THE
COLLATERAL BRANCHES OF THE GENEALOGICAL FAMILY TREE, THE OBLIGATORY USE
OF ROENTGENOGRAPHY, BIOCHEMICAL ANALYSIS, AND CHROMOSOMOGRAPHY, AND WARN
AGAINST THE OVERSIMPLIFIED GENETIC APPROACH. DOING JUSTICE TO
FACTOGRAPHY, THEY ACCENTUATE THE PREDOMINANT ROLE OF THE METHODOLOGICAL
AND PHILOSOPHICAL PRINCIPLES OF THE CLINICAL GENETICS.   THE
ACCESSIBILITY OF THE INHERITED DISEASES OF THE WEIGHTBEARINGLOCOMOTOR
APPARATUS TO NOT ONLY TREATMENT, BUT ALSO CONTROL IS STRESSED.
FACILITY: KHARKOV INSTITUTA PROTEZIROVANIYA, OPTOPEDII I TRAVMATOLOGII
IM. M. I. SITENKO.

UDC 632.954

USSR

LOGACHEV, S. A., Senior Scientific Coworker at the Alekseyev Experimental Station, VNIIEMK

"Herbicides for Coriander Planting"

Moscow, Zashchita Rasteniy, No 5, 1970, p 30

Abstract: The study was carried out on the coriander "Alekseyevskiy 247" planted in black soil poorly supplied with water. It was shown that all types of herbicides increase considerably the economic effectiveness of coriander production. Weeds were lowered by a factor of 3-5 times, increasing the yield by 3-4 centners per hectare, with the utilization of 2,4-D.

1/1

TITLE--SEA TANKERS -U-

AUTHOR--LOGACHEV, B.I.

COUNTRY OF INFO--USSR

SOURCE--SEA TANKERS (MORSKIYE TANKERY) LENINGRAD. SUDOSTROYENIYE. 1970.
360 PP
DATE PUBLISHED-------70

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

TOPIC TAGS--CARGO SHIP, OCEAN TRANSPORTATION, MARINE PROPULSION, MARINE
TANKER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0572   STEP NO--UR/0000/70/000/000/0001/0360

CIRC ACCESSION NO--AM0110367
                              UNCLASSIFIED

CIRC ACCESSION NO--AM0110367
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE SCIENTIFIC EDITOR 6.
FROM THE AUTHOR 7. CHAPTER I BASIC STAGES IN THE DEVELOPMENT OF
TANKERS 9. II TANKERS OF THE SOVET UNION 33. III BASIC ELEMENTS
AND CHARACTERISTICS OF MODERN TANKERS 58. IV SEAGOING QUALITIES
145. V ARCHITECTURAL TYPE AND GENERAL ARRANGEMENT 214. VI
DURABILITY OF THE VESSEL AND ITS DESIGN 245. VII SYSTEMS AND
INSTALLATIONS 263. VIII POWER SYSTEMS AND AUTOMATION 302. IX
SOME PROBLEMS OF ECONOMY IN TANKER CONSTRUCTION 332. LITERATURE 357.
THIS IS A SURVEY OF DESIGNS OF TANKERS, SOVET AND FOREIGN. EXAMINED
ARE: FACTORS INFLUENCING THE CHOICE OF THEIR LOAD LIFTING CAPACITY,
SPEED, CORRELATIONS OF MAIN MEASUREMENTS, FORMS OF OUTLINE, ETC. THE
BOOK IS DESIGNED FOR ENGINEERS IN THE SHIP BUILDING INDUSTRY DESIGNING
AND BUILDING TANKERS.

UNCLASSIFIED

1/2   006   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--SOLVENT EFFECT ON THE COMPLEXING PROPERTIES OF LIGANDS OF COBALT II
  WITH HETEROCYCLIC AMINES -U-
AUTHOR-(02)-LOGACHEV, V.A., DULOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1033-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT ACTION, COBALT COMPLEX, PYRIDINE, QUINOLINE, ACRIDINE,
  ACETONITRILE, ETHYLENE GLYCOL, CYCLOHEXANONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1167   STEP NO--UR/0078/70/015/004/1033/1036

CIRC ACCESSION NO--AP0128589
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0128589

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEXING OF COX SUB2 (X EQUALS CL OR BR) WITH PYRIDINE, QUINOLINE, AND ACRIDINE (L PRIME) WAS STUDIED IN CYCLOHEXANONE (I), MECN, ETHYLENE CHLOROHYDRIN (II), AND ETHYLENE GLYCOL (III). STABILITY OF THE COMPLEXES DECREASED WITH THE SOLVENT IN THE ORDER: I LARGER THAN MECN LARGER THAN II APPROXIMATELY EQUAL TO III. INSTABILITY OF COMPLEXES IN III IS EXPLAINED BY THE ACIDITY OF THIS SOLVENT AND STRONG INTERACTION WITH THE AMINES. OCTAHEDRAL COMPLEXES OF QUINOLINE AND ACRIDINE WERE VERY UNSTABLE DUE TO STERIC HINDRANCES OF THESE LIGANDS. DESPITE THE SIMILAR PERMITTIVITY VALUES OF III AND MECN, COX SUB2 FORMS OCTAHEDRAL COMPLEXES IN III AND TETRAHEDRAL COMPLEXES IN MECN. APPARENTLY, THE PERMITTIVITY OF THESE COMPLEXES DEPENDS NOT ONLY ON THE CONFIGURATION BUT ALSO ON THE CHEM. NATURE OF THE SOLVENTS.

UNCLASSIFIED

USSR   UDC: 621.371.332.3.01

BABAYEV, A. B., LOGACHEV, V. P., FEDOROV, V. A., PARFENT'YEV, V. N.

"Experimental Investigation of the Characteristics of Reflection From Uneven Ground Surfaces"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp. 110, pp 87-89 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8G56)

Translation: An investigation was made of the power of a signal reflected from a ground surface with forest cover as a function of the angle of irradiation of the surface for various types of forest cover (heavy coniferous forest, deciduous, mixed, and so on), and also of the influence which the moisture content of the reflecting surface and cover has on the power amplitude and degree of depolarization of the reflected signal. The results are presented in juxtaposition with data found for the surface of the sea, ice, and plowed ground without cover. Three illustrations, two tables. N. S.

1/1

- 21 -

USSR

BABAYEV, A. B., LOGACHEV, V. P., PARFENT'YEV, V. N., FEDOROV, V. A., SEELO-MANOVA, G. P.

"Some Problems of Reflection of a Frequency-Modulated Signal From Forest Cover"

Translation: Using an experimental model of a radio altimeter with frequency modulation (waveband of 7 cm, deviation of 100 MHz, width of the polar diagram at half power in both planes 25-30°), the authors studied the errors in measurement of flight altitude over a forested surface. The experiments were done over hills of various heights with different types of trees. A singularity was found in the signal reflected from the forest -- beats with two maxima showed up in the signal spectrum. The error in altitude measurement depending on the density and height of forest cover is determined. Three illustrations. N. S.

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USSR

UDC 536.46+662.32

FROLOV, YU. V., POKHIL, P. F., and LOGACHEV, V. S. (Moscow)

"Inflammation and Combustion of Powdered Aluminum in High-Temperature Gaseous Media and the Composition of Heterogeneous Condensed Systems"

Abstract: The article gives a brief survey of Soviet scientific studies published in the last three or four years on peculiarities of the mechanism for the inflammation and combustion of metal particles (especially aluminum) and the effect of the latter on the combustion of condensed systems. The following areas are covered:

1. The study of the process of the inflammation and combustion of individual metal particles in a high-temperature gaseous oxidizing medium.

2. The study of peculiarities of the mechanism for the combustion and inflammation of powdered metal particles in the combustion products of condensed fuel-oxidizer systems.

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USSR

FROLOV, YU. V., et al., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 213-236

3. The study of the principal regularities in the enlargement (agglomeration) of powdered metal particles on (or near) the burning surface of ballistic or mixture powders with increased concentration (up to 25 percent) of the metallic additive.

4. Detection of the principal directions of the effect of powdered metals on the combustion rate of mixture condensed fuel-oxidizer systems.

2/2

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Combustion

USSR

UDC 541.124-137

LOGACHEV, V. S., DMITRIYEV, A. S., and POKHIL, P. F., Institute for Physical Chemistry, Academy of Sciences, USSR, Moscow

"Combustion Mechanism for Ammonium Perchlorate"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 2, 1972, pp 400-403

Abstract: The mechanism is examined for the generation of the ionization zone during the combustion of ammonium perchlorate (APC) and equations derived quantitatively relating the kinetics with events occurring in the condensed phase and gas phase during the decomposition. The monomolecular reaction rate follows the equation

$$un_1 = \int_0^\infty n_0 Z_1 \cdot \exp(-E_1/kT)dx$$

where u is the rate of combustion; n_0 and n_1 are the number of APC molecules and the number of defects per cm^3, E is the activation energy; and Z_1 is the

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USSR

LOGACHEV, V. S., et al., Doklady Akademii Nauk SSSR, Vol 205, No 2, 1972, pp 400-403

preexponential factor. Combining this equation with a similar one for bimolecular reactions, and expressing E_1 (and the corresponding E_2) and n_1 in terms of the physical constants of the system and experimental conditions, an equation is obtained which expresses u entirely in terms of physical and thermodynamic variables. From this equation it can be seen that the governing factors are the physical and chemical processes occurring in the condensed phase of the crystal.

2/2

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UDC 662.222

USSR

LOGACHEV, V. S., DMITRIYEV, A. S., and POKHIL, P. F. (Moscow)

"On the Mechanism of Ammonium Perchlorate Combustion"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 236-247

Abstract: The article attempts to elucidate the mechanism for the appearance of an ionization zone in the combustion of ammonium perchlorate, as well as to establish quantitative relations between kinetic regularities taking place in the condensed and gaseous phase during the decomposition (combustion) of inorganic oxidizers. For this purpose measurements were taken of the electric conductivity of the condensed phase during the combustion of ammonium perchlorate. Experiments were staged in a nitrogen atmosphere in the pressure range of 200 mm Hg -- 100 atm. The charges were made of two square-shaped tablets, between which were tungsten-rhenium wire probes. The potential difference fed to the probes varied from 0 to 50 v according to the conditions of the experiment. At the same time the flame temperature was measured by a thermocouple at the site of the probes, with the probes themselves being used as thermocouples at the same time in individual experiments, while the combustion rate could be judged from pressure variations in the bomb.

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USSR

LOGACHEV, V. S., et al., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 236-247

The following three important results were noted in the experiments:

1. The activation energy of ammonium perchlorate decomposition grows as the temperature in the heating-up zone (Michelson layer) of the ammonium perchlorate grows.

2. A potential difference appears in the reaction zone.

3. The gas directly next to the burning surface of ammonium perchlorate is in the plasma state.

The following combustion mechanism is possible:

1. In the heating-up zone of the condensed phase, negative and positive ion defects are formed, resulting in a space charge with high conductivity in the reaction layer of ammonium perchlorate.

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USSR

LOGACHEV, V. S., et al., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 236-247

2. Since exchange reactions are hindered in the surface layer, ion association takes place with the formation of ion pairs, since this is more advantageous from the energy standpoint.

3. As the associates reach the surface, the ammonium perchlorate crystals dissociate, forming radicals of the ClO_4^-, NH_4^+ or HCl_4, NH_3 type and ionization zones in the gaseous phase (of the chemical plasma, where $e^2/r = kT$).

The combustion rate of ammonium perchlorate is determined by the physicochemical processes taking place in the condensed phase of the crystal.

3/3

UDC 536.46 + 662.224.1

USSR

POKHIL, P. F., MAL'TSEV, V. M., LOGACHEV, V. S., SELEZNEV, V. A., Moscow

"Combustion of Aluminum Particles in the Flame of a Condensed System"

Fizika Goreniya i Vzryva, No 1, Mar 71, pp 51-57.

ABSTRACT: This work presents a study of the process of combustion of aluminum particles in a flame of type N ballistite powder and a model mixture of ammonium perchlorate with organic fuel. The study of the process of combustion of metal particles was performed in a constant pressure bomb with quartz windows, in which a vacuum or the necessary inert gas (nitrogen, argon) pressure was created. The metal particles were introduced to the composition of the fuels during the manufacturing process. A photographic method was used to study the processes occurring on the surface of combustion, and specimens were taken to study the dimensions of the metal particles through the height of the flame. It was established that as ballistite powder burns, the metal particles adhere to the thermostable decomposition products of the nitrocellulose, later merging near the surface of the charge. Increasing the percentage of metal in the fuel causes an increase in particle diameter. Aluminum particles accumulate and

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UDC 536.46 + 662.222.1

USSR
POKHUL, P. F., MAL'TSEV, V. M., LOGACHEV, V. S., SELEZNEV, V. A., Fizika
Goreniya i Vzryva, No 1, Mar 71, pp 51-57.

aglomerate on the surface of combustion of the charge. In the initial stage
of combustion, oxidation of the metal occurs on its surface, with 4 to 6% of
the heat realized due to combustion of the metal liberated in this manner in
the reaction layer. Combustion of aluminum particles in the flame occurs
through intermediate products with the formation of lower oxides. The tempera-
ture of the combustion zone of aluminum particles is 400-600° higher than the
temperature of the remainder of the flame.

2/2

- 31 -

USSR   UDC:662.215.2

POKHIL, P. F., LOGACHEV, V. S., MAL'TSEV, V. M., Moscow

"Mechanism of Combustion of Metal Particles"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 407-410

Abstract: This article is dedicated to investigation of the combustion
of condensed systems containing such metals as aluminum, magnesium and
their alloys as additives. The experimental study was performed using
cylindrical specimens 5 mm in diameter and 7-10 mm high. It was estab-
lished that ballistite burns stably with preliminary heating to a minimum
temperature of 110°C, while an ammonium perchlorate composition must be
heated to a minimum temperature of 200°C. Studies were made of the
thermal effect of the summary exothermic process in the reaction layer of
the condensed phase. The results indicate that in the area of flameless
combustion of ballistite compositions with aluminum the surface tempera-
ture of flameless combustion is 300°C, that is on the same order as for

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USSR

ballistite compositions without the metal. This indicates that the alumi-
num particles burn in the smoke-gas zone of the flame near the surface
rather than on the surface of the condensed material. High-speed
cinematography indicated that the rate of combustion of aluminum particles
is an order of magnitude less than the rate of combustion of the ballistite
composition, and increases with increasing surrounding medium temperature.

2/2

1/2   049   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--INVESTIGATION OF METAL PARTICLE FUSION DURING THE COMBUSTION OF
   METALLIZED BALLISTITE COMPOSITIONS AND FUEL OXIDIZER MIXTURES -U-
AUTHOR-(03)-POKHIL, P.F., LOGACHEV, V.S., MALTSEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA GORENIIA I VZRYVA, VOL. 6, AR. 1970, P. 80-92

DATE PUBLISHED----MAR70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--AMMONIUM PERCHLORATE, POTASSIUM PERCHLORATE, COMBUSTION RATE,
   FORMALDEHYDE, COMBUSTION PRODUCT, SOLID PROPELLANT COMBUSTION, ALUMINUM
   POWDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605107/E12 STEP NO--UR/0414/70/006/000/0080/0092

CIRC ACCESSION NO--AP0140763
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0140763
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   PHOTOGRAPHIC AND MICROSCOPIC STUDY
OF THE FUSTION OF METALLIC PARTICLES DURING THE COMBUSTION OF
STOICHIOMETRIC MIXTURES OF AMMONIUM AND POTASSIUM PERCHLORATE AND
POLYFORMALDEHYDE WITH ADDITIONS OF 7, 13, OR 20PERCENT ALUMINUM
PARTICLES OF VARIOUS SIZES AND GEOMETRIES. SPECIAL TECHNIQUES WERE USED
FOR SAMPLING THE CONDENSED PHASE OF THE SMOKE GAS MIXTURES AT VARIOUS
DISTANCES FROM THE BURNING CHARGE SURFACE. THE DEPENDENCE OF THE
CHARACTERISTICS OF THE FUSION PROCESS ON THE VARIABLES OF THE COMBUSTION
PROCESS IS DISCUSSED.

UNCLASSIFIED

USSR

UDC: 536.45

POKHIL, P. F., LOGACHEV, V. S., MAL'TSEV, V. M.

"Study of Fusion of Metal Particles During Combusion of Metallized Ballistite Compositions and Fuel-Oxidizer Mixtures"

Novosibirsk, Fizika Goreniya i Vzryva, No. 6, March 1970, pp 80-92

    Abstract: Experimental data have indicated that the mechanism of combustion of ballistite compositions does not change with the addition of aluminum. An investigation of the size, form and state of particle surfaces before and after combustion of ballistite compositions at various pressures was performed in order to gain an idea of the mechanism of combustion of the aluminum particles added. Photographs of particles during the process of combustion are presented. As the ballistite compositions plus aluminum burn, the particles of metal adhere to the thermostable products of decomposition of the nitrocellulose, then fuse near the surface of the charge. During combustion of fuel-oxidizer-metal compositions, fusion of the metal particles occurs on the surface of the charge, since the charge temperature is sufficient to melt the aluminum and magnesium. As the percent of metal in the composition is increased, the mean particle diameter of aluminum and magnesium particles formed as a result of fusion on the charge surface also increases. The degree of fusion of metal

1/2

USSR

POKHIL, P. F., LOGACHEV, V. S., MAL'TSEV, V. M., Novosibirsk, Fizika
Goreniya i Vzryva, No. 6, March 1970, pp 80-92

particles on the charge surface increases with decreasing size of the initial
particles of metal in the model composition. The mean volumetric size of
particles of aluminum and magnesium formed as a result of fusion on the charge
surface decreases with increasing combustion rate of the charge. The velocity
of particles of aluminum and magnesium formed as a result of fusion on the hot
surface of the model mixture is 2-3 mm/sec for aluminum and 4-5 mm/sec for
magnesium.

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